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ORIGINAL ARTICLES.

EYE-STRAIN AND HEADACHE.

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THE statement in a recent editorial of the (Philadelphia) MEDICAL NEWS, that this subject has received practically no attention in Europe, and in this country only in a few cities, is undoubtedly a correct one. While the oculists and neurologists in this locality are taking up the subject with considerable seriousness, as evidenced not only in practice but in a recent contribution to the literature of the subject by Dr. Cheney (as well as in the discussion by the members of the Medico-Psychological Society, following the reading of this paper), the position of the general practitioner, taken as a whole, here as elsewhere, is probably not as yet so firmly established as experience would warrant.

In conversing upon the subject with other practitioners, we have met the usual criticisms that follow the expression of opinion in any comparatively new field. One states that the ground taken is a matter of common knowledge; the next, that it is overdrawn. In answer to the former criticism, we can only point to the literature, which certainly shows that if the knowledge of these subjects is common, its expression is singularly defective. In answer to the second criticism we have nothing to offer but facts, borne out by the everyday experience of the modern oculist, as well as to that of such neurologists as have subjected their cases to the investigation of these practitioners in preference to relying upon routine treatment by drugs.

It is a curious fact that among the causes of functional headache, and more particularly of migraine, elaborated in the various text-books and monographs, so little attention has been paid to this cause, which, in the estimation of the writers of this at least, plays a more important part than any other single factor—namely, extraneous irritation in the form of eye-strain. This is the more surprising in view of the fact that the item of etiology is generally dealt with in the text-books in a most exhaustive, though not always judicial manner; as an example of which we need only cite the disease locomotor ataxia, which is still accredited to sexual

excess, exposure to cold, severe bodily and mental exertion, sudden fright and repeated anger, acute disease, as typhus, rheumatism, pneumonia and diphtheria, trauma, and tobacco, as well as to the one cause (we allude, of course, to specific disease) which can be traced in so large a proportion of cases as to render the question pertinent whether in point of fact 100 per cent. of genuine cases of the disease, after excluding Friedreich's disease, do not arise from this one poison.

It seems odd that among the long list of causes of migraine and cephalalgia, to which every collaborator adds, but from which few venture to deduct, that the one cause to which we have alluded has found so little place, scarcely more in some cases than cursory mention, in others none at all.

To cite a comparatively modern instance, the manner in which it is mentioned by Ross shows the usual lack of appreciation of the extent and character of the irritation produced by constant eye-strain. This author describes under the head of cephalalgia, the anemic, the hyperemic, the hysterical, the toxic, the febrile, the gouty, the rheumatic, the syphilitic, the neurasthenic, the organic, and the sympathetic headache, and devotes to migraine, on account of its great importance, a "separate and extended consideration." Under the causes of migraine, which is in reality one of the most common results of refractive error, this trouble is not mentioned; only under the head of "sympathetic headache" does he mention the subject of eye-strain, stating that it produces a form associated with vertigo and vomiting, referring to Weir Mitchell's article on the subject published in the *American Journal of the Medical Sciences*. The inference naturally drawn is that a certain variety of headache, of no considerable extent or importance, but characteristic in its form, results from eye-strain.

Gowers does not mention eye-strain in his otherwise exhaustive chapter on "Migraine," which he attributes to heredity, excessive brain-work, over-fatigue, work in hot and crowded rooms, anemia, over-lactation, and (in one case) ague. The special treatment, he states, "consists first, in the continuous administration of drugs, and, second, the treatment of the attacks themselves"—not mentioning the necessity for the use of glasses at all. We should say rather that the first indication was to look for and to correct errors of refraction, only appealing to the continuous use of drugs as a last

resort. Certainly the patients who have tried the continuous use of drugs for years, and have finally been speedily relieved by the use of glasses, would give very decided testimony in favor of this order of procedure.

Under cephalalgia, Gowers states that a common cause of frontal neuralgic headache is the use of the eyes when there is hypermetropia, the pain going off when the use of the eyes for near work is discontinued. The misconception here is three-fold—in the first place, the frontal neuralgic type of headache is by no means the only one produced by eye-strain; secondly, it is caused not only by near, but also by far work, as the action of the ciliary muscle is continuous in hypermetropia even in looking at distant objects; and, thirdly, far from disappearing when the use of the eyes is discontinued, such pain often first appears at this time. Occipital headaches are generally due, according to this author, to gastric disturbance, a point upon which we would also join issue, the pain from eye-strain being so often not only occipital, but extending down the back of the neck, that examination of the refraction seems to us in such cases indicated, rather than consideration of the digestion; and even where the latter is present, it may be secondary, as the editor of *THE NEWS* has pointed out, to eye-strain.

The experience of the writers, as tabulated further on, would show that after eliminating the organic, syphilitic, gouty, rheumatic, toxic, and febrile headaches described by Ross, Dr. Cheney's statement that at least half of the cases of functional cephalalgia met with in everyday practice, whether classified under anemia, hyperemia, hysteria, neurasthenia, or migraine, are curable by the adjustment of proper glasses, is by no means overestimated.

Clinicians are perhaps often thrown off the track by the statement of the patient that his eyesight is perfect, even sometimes remarkably clear. It has not infrequently happened in our experience that such patients have vision so acute for distance that they are called on by their friends to distinguish distant objects. The sufferer is in this case usually a hypermetrope, this form of refractive error being almost as potent as astigmatism in producing headache and other cerebral symptoms, on account of the constant though unrecognized effort of accommodation necessary to produce the acuity of vision which is the envy of his friends. The question of acuity of vision may, therefore, be absolutely excluded from consideration in deciding this question. It is, in fact, as Dr. Cheney has shown, often the cases in which the error of refraction is slight that cause the most trouble, as the moderate effort of accommodation here necessary to produce per-

fect vision is constant, whereas in cases of extreme error the effort is sometimes discontinued. It is, however, important to inquire whether there is blur before the eyes, or pain in the eyes after continued use, particularly by artificial light. It is also important to look for conjunctivitis and blepharitis, although these signs are not necessarily present. The question whether the headache occurs during or after excessive use of the eyes is also an important one to put, but the reply, if negative, is not to be too implicitly relied upon, partly because of the patient's inability to decide this point, and partly because the headache caused by eye-strain does not necessarily follow immediately upon such efforts as recognized by the patient. It may be pertinent to mention here the fact that individuals vary greatly in the amount of accommodative effort made in ordinary life, as in walking upon the street. The habit may be formed by the sufferer from astigmatism or hypermetropia of avoiding efforts at accommodation in reading distant sign-boards, telling the time at a distance, etc., by simply declining to make the effort. This habit persisted in will often relieve such a person from the necessity of wearing glasses continuously, provided he puts them on for each effort, no matter how brief, at accurate vision, as for reading or writing. For the average patient, however, it is safer to recommend the constant use of spectacles.

This variety of frame should be insisted upon at least in cases of astigmatism, if we are to do justice to the patient and ourselves; for a slight deviation of the axis may only add to, instead of relieving the irregular spasm of the ciliary muscle. This fact, added to the unnatural pressure of eyeglasses (often ill-borne) may render our endeavors futile, and lead to the supposition that the effect of eye-strain has been overestimated. It is in the majority of cases wiser, therefore, to advise the use of spectacles constantly, at least until the connection with the eye-strain is established, after which the patient, if he chooses to experiment with eyeglasses or with leaving off glasses in the street, may do so upon his own responsibility. In point of fact, however, many patients, more particularly female patients, will choose to try this experiment first, whatever is advised, and only adopt the proper course, if at all, later.

In the theater, particularly, it is important that glasses should be worn by the class of patients under consideration, the long-continued effort here necessary at accurate distant vision, by artificial light, being probably frequently the cause of the headache commonly attributed to late hours or late supper.

It is a noteworthy fact that the statement not infrequently appears in the text-books that headaches

are liable to disappear at the age of from forty-five to fifty-five, the true reason for this disappearance not being recognized, the cause being in point of fact in the majority of these cases, that the power of accommodation is lost at this age, as has been dwelt upon by Dr. Cheney in the article already quoted. The same observer points out that the usual period of onset of such headaches, namely, at the age of from twelve to seventeen years, is due to the fact that in childhood the power of accommodation is so great as to make the effort for accurate vision comparatively easy, and partly to the fact that such vision is not called for until hard study is begun. The trouble may, however, begin even in childhood, especially if the child is studious.

The experience of the writers of this paper does not bear out the statement of Ross that headache from eye-strain is particularly liable to be accompanied by vertigo and vomiting, though it may be so, nor do we recognize any constant type of headache as resulting from eye-strain, though migraine has been perhaps as frequent as any form. We have found the headache more frequently, however, beginning in the frontal and occipital regions than in the vertex or temporal regions, though all these points become, involved, of course, in migraine, a form of headache in which the error of refraction is generally found to predominate on one side, or to be (in case of astigmatism) in different axes.

Ranny should certainly be given credit for his persistence in impressing eye-strain upon his readers as a cause, not only of other reflex symptoms, but also of typical migraine, which he considers invariably due to error of refraction or to insufficiency of the ocular muscles. It is perhaps the extreme character of this view that has defeated its adoption, but it is probably nearer the truth than the view that this factor need not be mentioned at all in the etiology of migraine or considered in its treatment. It would certainly be wiser to advise careful ocular examination, if necessary under a mydriatic, in the case of every sufferer than to neglect it in one case in which the use of proper glasses would give relief.

In our own practice, after eliminating syphilis, toxic influences, and organic brain-disease, an ophthalmologic investigation is the first thought that suggests itself in every case of long-standing headache, and the result has generally more than justified the investigation.

We have formulated sixty consecutive cases that we have seen in private practice, from the majority of which we have been able to ascertain the history after the use of glasses. The majority of the cases were examined either by Dr. Bradford or by Dr. Cheney; several by Drs. Wadsworth, Derby, and Chandler. The predominating refractive error was astigmatism.

The results are as follows:

Relieved	37
Relieved in a measure	5
No relief	3
Doubtful	2
No record	6
Oculist not consulted	7
	<hr/> 60

Among the three cases unrelieved is one in which the oculist discovered no error worthy of correction.

Three cases selected as types will serve to show the prevailing character and severity of the headache relieved by appropriate ocular treatment. It seems hardly necessary to prolong the list further.

CASE I.—A hotel clerk, about thirty-eight years old, had been troubled with severe headaches for many years, commencing in the frontal region, sometimes right, sometimes left, and extending to the occipital region. He had blurred vision at times. The attacks were frequently accompanied by nausea and vomiting, and made it impossible for him to attend to his duties for several hours. His eyes were examined by Dr. Bradford and glasses prescribed as follows:

O. U. + 0.50 S. \bigcirc + 0.50. cyl. ax. 0° .

Nearly two years have elapsed since he began wearing them, and during this time he says he has never suffered from headache.

CASE II.—A physician, thirty years old, had suffered with frequent headaches, generally frontal, left, ever since early childhood. These finally occurred two or three times weekly, and were not relieved by any of the usual remedies, such as phenacetin, antipyrin, etc. In the spring of 1889, Dr. Cheney examined his eyes, having first paralyzed the accommodation with homatropine. The following glasses were prescribed:

O. D. + 0.50 cyl. ax. 105° .

O. S. + 0.25 S. \bigcirc + 0.50 cyl. ax. 80° .

Since putting on the glasses he has had no headaches, although when he attempts to read without glasses he quickly begins to have shooting pains in the left eye and forehead.

CASE III.—A physician, aged thirty-eight, had severe and frequent headaches from the age of ten, generally unilateral, commencing in the frontal region, lasting from twelve to twenty-four hours, sometimes accompanied by vomiting, generally preceded by blurring, the latter sometimes limited to half the field of vision, the line of demarcation on one occasion being horizontal and clearly defined (exceptional). Headaches were very rare and comparatively mild since he began wearing glasses, except on one occasion after inversion of the left glass by a mistake of the optician. The statement of refractive error is taken from Dr. Bradford's notes:

O. D. = 0.8 c — 1.50 cyl. ax. 90° .

Eye is also myopic — 0.25, but the addition of — 0.25 causes quite severe strain.

O. S. = 0.8 c — 1. sp. \bigcirc — 0.75 cyl. ax. 45° .

The whole amount of myopia (— 1) causes much discomfort. Can bear — 0.50.

Exact refraction:

O. D. = 0.8 c — 0.25 sp. C — 1.50 cyl. ax. 95°.

O. S. = 0.8 c — 1. sp. C — 0.75 cyl. ax. 45°.

Owing to inability to use the whole amount of myopic portion of glass, the following was ordered:

O. D. — 1.5 cyl. ax. 95°.

O. S. — 0.50 sp. C — 0.75 cyl. ax. 45°.

We would not be considered enthusiasts, who, generalizing from a few cases, formulate a theory to cover all. On the contrary, we recognize all the other sources of headache enumerated in the text-books.

It must be recognized, also, that in these cases, as in all functional nervous diseases, more than one factor may be at work, all of which must be combated if perfect recovery is hoped for. An illustration of this fact is furnished by a case referred to one of us not long ago by Dr. Derby. This was in a young lady of twenty-one, who for about five years had suffered from headaches, frontal and occipital, so frequent and severe as to preclude the possibility of continuing her accustomed employment. The error of refraction had been corrected as far as possible, and some relief had thus been afforded, but the headaches persisted with a frequency of about three weekly. The patient was quite anemic, and was put upon the saccharated oxide of iron and phenacetin as required, with general directions regarding rest, exercise, and diet. Rapid improvement followed, and at the end of two months the headaches had become so infrequent, and her general health so far restored, that she was able to discontinue treatment. She only complained at that time of frontal headache of comparatively short duration and coming on only after excessive use of the eyes. At least two elements were certainly, therefore, at work in this case. It is probable that the general treatment would have proved comparatively fruitless, however, without previous correction of the refractive error, and the order of treatment adopted seems to us the rational one in such cases. This case of mixed etiology may seem an unfortunate one in this connection, especially in that the cure was not complete. We mention it, however, to show that the problem is not always a simple one, and as regards recovery, when such a delicate matter as the subsidence of a long-standing ciliary spasm is under consideration, it would be far too optimistic to expect absolute freedom from headache after the adjustment of glasses, even when the etiology is obvious; nor should the theory of eye-strain as the frequent cause of cephalalgia be challenged on these grounds, as Dr. Cheney has already pointed out.

In conclusion we would emphasize these points:

1. A large proportion of cases of functional cephalalgia, and especially migraine, is due wholly or in part to eye-strain.

2. Good vision is not inconsistent with such difficulty.

3. When practicable very slight errors of refraction should be corrected in cases of cephalalgia as well as in others with functional nervous symptoms.

ARE DIPHTHERIA AND TYPHOID FEVER FILTH-DISEASES?

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WHEN, half a century ago, it began to be recognized that many diseases of an infectious and contagious nature prevailed most extensively in the midst of filthy surroundings, the doctrine of the danger of filth was preached vigorously by both physicians and laymen. This propaganda of cleanliness has been productive of so many true sanitary improvements, and throughout civilized countries has so immensely improved the comfort and decency particularly of the wage-earning class, that it has proved itself no mean factor in the civilizing influences of the age. The causative relation of filth to disease is a theory based in the first instance, it is to be feared, on the too careless inference drawn from data not sufficiently investigated and understood. That there is truth, and valuable truth, in the theory, is not to be gainsaid; but that it has often been pushed beyond all reasonable limits by its advocates must also be admitted. Our medical knowledge is a growing plant, which, while expanding in every direction, constantly needs the pruning both of its dead and its too luxuriant branches. There is usually somewhat of truth and somewhat of untruth in all the conclusions that are arrived at as the result of scientific investigation. Thus in the case of the filth-causation of disease, it is certainly true that the specific contagium of typhoid fever and cholera are contained in the evacuations of the sick, and that water and soil receiving even an infinitesimal amount of such evacuations become the storehouses and carriers of the poison. Here filth, and filth in its most offensive form, becomes the true cause of disease. But we are not warranted, therefore, in assuming that every case of typhoid fever or cholera must have its source in some vault, or cesspool, or polluted well, or that every collection of decomposing and filthy material is likely to cause these diseases. The rise of the germ-theory, when it was merely a theory, did much to strengthen popular and professional belief in filth-diseases. If filth is teeming with microorganisms, and these organisms are the causes of the infectious diseases, the best way,

and a sure way, to prevent these diseases is to get rid of all forms of filth. If a single germ, by its rapid reproduction, is capable of giving rise to a case of sickness, and if these germs can be borne on the slightest breath of air, a pin-hole opening in a sewer-pipe may be, nay, must be, a fatal opening into our dwellings for the ingress of the seeds of disease. But the labors of the bacteriologist have raised many of the propositions of the germ-theory to the realms of actual knowledge, and at the same time have shown many of the deductions of this theory to be false and misleading. Though there is plenty yet to learn, we now know enough to correct many of our former guesses. Thus we know that not all germs are pathogenic. In fact, the great majority are not, and this is particularly true of those found in decomposing material, *i. e.*, filth. In many cases, indeed, putrefactive organisms are directly hostile to the development of the pathogenic, and quickly choke them out. Thus the human alimentary tract contains countless swarms of such harmless forms. It is not filth in the sense of dead and decaying organic matter which is dangerous, but only such matter when it is the seat of growth of specific pathogenic organisms. It has also been demonstrated by inoculation-experiments on animals that the likelihood of a single micro-organism, or even a moderate number of them, setting up disease, is extremely small. Practically, it is found that it requires considerable masses of organisms to insure infection, and such masses are not readily carried about in the air. Recent progress in aseptic surgery has shown that the excessive fear of aerial infection—the great bugbear of the originators of antiseptic surgery—was unfounded.

We now know, too, that microorganisms are not readily given off from moist surfaces, and that the air of drain-pipes, sewers, and cesspools usually contains a much smaller number of microbes than the air of our streets and dwellings. While "sewer air" cannot be as healthful as outdoor air, and its inhalation may produce certain constitutional and local symptoms, it certainly is not in itself the cause of infectious disease. Unless the current escaping from a leaky pipe is strong enough to carry off particles of liquid with contained organisms, it cannot be the carrier of contagion. It is extremely improbable that a small opening in a soil-pipe or drain can be the source of infectious germ-disease, even if the drain itself be infected.

Until a very recent time cholera, typhoid fever, the diarrheal diseases, diphtheria, and even malaria, scarlet fever, and smallpox, were supposed to be caused chiefly, if not solely, by filth, pure and simple. While clinical evidence has, indeed, made clear to most that diseases like scarlet fever and smallpox are probably spread by immediate contagion

chiefly, yet diphtheria and typhoid fever are still commonly attributed to filth. Thus, in the last two years, the health officers of the various towns in Michigan, in reporting outbreaks of infectious disease to the State Board of Health, found "filth," as popularly understood, the etiologic factor in the following instances: Of 251 outbreaks of diphtheria, in which the health-officer was confident enough to state the source of the disease, it was attributed to "unsanitary surroundings" in 74. In 176 outbreaks of typhoid fever in which the cause was supposed to be determined, it was attributed to filth and bad water in 76. These 76 did not include those instances in which the water was known or supposed to be specifically polluted by typhoid stools. Even 6 of 194 outbreaks of scarlet fever were attributed to filth. Nothing is more common than to have not only laymen, but also educated physicians, attempt to trace every case of diphtheria or typhoid fever to a defective water-closet, a broken drain-pipe, or a neighboring privy-vault. And nothing is more common, when such unsanitary conditions are found, than to hear exclamations of surprise that typhoid fever or diphtheria has not resulted from them. I do not by any means wish to affirm that filth is never the cause of disease, or that it is not always desirable to get rid of it if possible, nor would I belittle the work of the apostles of cleanliness who have done so much for the comfort and health of mankind. What I wish to do is to inquire whether the relation between the two diseases mentioned—diphtheria and typhoid fever—and filth is as close as is generally supposed. By limiting the agency of filth as a cause of disease to its true field, even if we do narrow it, we are aiding rather than retarding the gospel of cleanliness.

One way of determining whether the two diseases specially mentioned are caused by filth and unsanitary conditions is to find in what proportion of cases of these diseases such conditions are found in the house, and also in what proportion they are found in houses generally in the same locality. If, where typhoid fever and diphtheria are found, bad sanitation is much more prevalent than in other dwellings near by, we would have good reason for suspecting a causative relation. But if not, we would be required to seek very strong evidence elsewhere to show that these are filth-diseases. I have no data at hand for just this comparison, but I can compare houses in which diphtheria and typhoid fever occur with those in which scarlet fever occurs. As there is no evidence whatever of any relation between scarlet fever and filth, or "sewer gas," this comparison is of much value, for if we find unsanitary conditions no more numerous in typhoid and diphtheria houses than in scarlet-fever houses, we shall have on this

ground at least no reason for considering the former any more filth-diseases than the latter, and that is no reason at all. The following tables show the result of inspections of the premises where scarlet fever, diphtheria, and typhoid fever have occurred in Providence, R. I., during the last seven years. These diseases have been so evenly scattered over the city that no error can arise from one set of houses being in one section and one in another:

RESULTS OF THE EXAMINATION OF PREMISES IN CASES OF CONTAGIOUS DISEASES.

Scarlet Fever.

YEAR.	Vaults full.	Cesspools full.	Yards filthy.	Untrapped sinks.	Defective waste-pipes and drains.	Filthy cellars.	No nuisance.	Total.
1885	23	11	14	113	56	20	32	269
1886	16	4	4	101	61	4	45	235
1887	70	9	14	232	88	5	247	665
1888	14	3	3	42	34	3	128	233
1889	4	4	2	42	9	...	51	110
1890	4	2	...	19	4	...	56	85
1891	14	3	3	57	17	2	157	253
Total	145	36	44	606	269	34	716	1850

Diphtheria.

YEAR.	Vaults full.	Cesspools full.	Yards filthy.	Untrapped sinks.	Defective waste-pipes and drains.	Filthy cellars.	No nuisance.	Total.
1885	8	3	4	33	20	4	28	100
1886	24	4	3	97	55	2	86	271
1887	25	5	2	112	49	4	87	284
1888	20	2	7	80	32	4	92	237
1889	16	7	4	68	27	6	89	217
1890	17	1	3	52	28	...	102	203
1891	10	3	5	42	10	2	81	153
Total	120	25	28	484	221	22	565	1465

Typhoid Fever.

YEAR.	Vaults full.	Cesspools full.	Yards filthy.	Untrapped sinks.	Defective waste-pipes and drains.	Filthy cellars.	No nuisance.	Total.
1885	10	3	5	39	28	3	12	100
1886	25	3	5	57	32	4	26	153
1887	10	1	2	27	9	1	21	71
1888	29	9	11	163	51	13	154	430
1889	9	3	1	61	21	3	96	194
1890	13	5	...	27	11	...	46	102
1891	11	1	6	46	20	...	111	195
Total	107	25	31	420	172	24	466	1245

It will be seen that as regards unsanitary conditions there is practically no difference between these diseases. Thus, untrapped sinks and defective sink-pipes and drains were found in 47.3 per cent. of the houses examined in which there was scarlet fever; in 48.1 per cent. in which there was diphtheria; and in 47.6 per cent. in which there was typhoid fever. As regards privy-vaults, cesspools, and yards, nuisances were found in 12.2 per cent. of houses with scarlet fever; in 12.5 per cent. with diphtheria; and in 13.1 per cent. with typhoid fever.

There is another point worthy of notice, which indicates that diphtheria should be classed not as a filth-disease, but rather with scarlet fever as a disease caused by contagion borne from one person to another. When scarlet fever occurs in a house, the statistics of Providence show that it tends to spread from the family first attacked to others in the same house in 14.8 per cent. of the cases, and in diphtheria in 15.2 per cent. Here again the difference is too small to be of importance. As in most cases untrapped sinks, defective waste-pipes, and neighboring privy-vaults affect both tenements alike (most houses in Providence are two and one-half stories, with two tenements), we should expect to find the disease in both tenements in more than this proportion of cases if it were dependent on such conditions.

When, as health-officer, I began the study of diphtheria I was inclined to believe, as I had been taught, that it was caused in many, if not most, cases by filth; but as I have followed the natural history of the disease as it has occurred in Providence, my belief in this cause has grown less and less, and my belief in direct contagion stronger and stronger. Study of the cases shows that, as a rule to which there are not many exceptions, it appears first in a single member of a family. After that, others in the same family are taken sick at varying intervals, and in a certain proportion of cases it is afterward reported from other families in the same house. About one-half the children exposed to this disease contract it—almost exactly the same proportion as in scarlet fever. In fact, as regards contagiousness, it acts almost precisely as does scarlet fever, and the reasons for thinking the latter always contagious and never obtaining a foothold for growth outside of the body are of as much force in regard to diphtheria. On the opposite page is a tabulation of some of these facts. The data for diphtheria do not cover so long a period as those for scarlet fever, but, as about the same ratio holds for individual years, this is of little moment.

The bacteriologists have determined that true diphtheria is caused by Löffler's bacillus, and we know that this organism not only retains its vitality

SCARLET FEVER.

	1887	1888	1889	1890	1891	Total.
Number of families in which there was more than one susceptible child	232	244	73	66	198	813
Number of families in which there was a second case	130	147	30	27	78	412
Number of susceptible children in all of the tabulated families	986	827	242	215	605	2875
Number of these children who were attacked	452	511	126	105	341	1535
Number of additional families with susceptible children in the house in which the disease appeared	112	128	18	15	98	371
Number of susceptible children in these families	381	354	34	30	238	1037
Number of these additional families attacked	27	16	0	2	10	55
Number of children in these families attacked	58	21	0	2	12	93
Number of instances in which susceptible children were at once removed	24	18	10	9	27	88
Number of instances in which they were attacked on their return	3	1	0	0	0	4

DIPHTHERIA.

	1889	1890	1891	Total.
Number of families in which there was more than one child	121	112	102	335
Number of families in which there was more than one case	47	42	37	126
Number of children in all of the tabulated families	472	422	356	1250
Number of these children who were attacked	231	191	164	586
Number of additional families with children in the same house	38	59	41	138
Number of children in these families	95	167	89	351
Number of these additional families attacked	7	11	3	21
Number of children in these families attacked	11	14	7	32
Number of children who were at once removed	26	28	26	80
Number of instances in which they were attacked on their return	0	2	0	2

for some time outside the body, thus favoring contagion, but that it can propagate itself, under favorable conditions, outside the body. We must therefore admit that dead organic matter or filth may be the source of this disease, but bacteriology and clinical evidence indicate that it is not usually so.

Typhoid fever, like diphtheria, is known to be due to a bacillus, the life-history of which has been pretty fully worked out. This organism can certainly develop outside the body, but it does not readily do so, being choked out by other forms of microbes. It is rarely found except in places which have recently been contaminated by typhoid excreta. The reasons which forbid our attributing diphtheria to the escape of sewer-air are equally good as applied to typhoid fever, and we are confronted with an additional fact that there is almost no good evidence to show that typhoid is caused by aerial infection. If it is, it must be only very rarely. It is generally, if not always, the food and drink which are the media of infection.

The tables of the results of the inspection of houses in which typhoid fever existed, as already given, are confirmatory of the view that this disease cannot be traced to defective plumbing or drainage; and they furthermore show that in the majority of cases it cannot rightfully be attributed to filthy surroundings. It has been pretty clearly proven that in a large proportion of cases typhoid fever is caused by the use of water contami-

nated by typhoid stools. In cities that have a public water-supply secure from such contamination, typhoid is quite rare as compared with localities dependent on wells, which necessarily offer exceptional opportunities for defilement. In cities the cases of typhoid fever that are not traceable to the water-supply seem to me likely to be caused chiefly in two ways: The disease-germs may be brought in from the country in food, as in milk, or in vegetables that are eaten uncooked, as celery, lettuce, radishes, etc. Or, perhaps, in the greater number of cases the infection may be somewhat as follows. It undoubtedly happens quite often that the discharges or the washings from soiled linen of a typhoid-fever patient are thrown into the yard or on to some refuse heap. Here the bacilli may grow for a time, and in any event, if the material becomes dry, as it often must, it may be blown away and be carried considerable distances by the wind. It is, of course, not unreasonable to suppose that food may thus be contaminated by this aerial infection. If this is a true explanation, we can say that typhoid fever is so far a filth-disease; but we must not, therefore, look for its source in the immediate surroundings. A local cleaning would not be much of a preventive, though a general removal of useless organic matter from a town or city would be.

It seems to me that diphtheria and typhoid fever are not filth-diseases, in the sense in which the public understands that term, except in a very limited

degree. Diphtheria is almost always due to contagion, though perhaps occasionally to the growth of its specific organism outside the body.

Typhoid fever is more often traced to filth in which its living cause, the bacillus of Eberth, has been growing, but usually the filth is the feces, and these are merely the carriers of the contagion. There is little or no evidence that a person contracts this disease by breathing infected air. The way of infection is by the alimentary tract.

There is little or no clinical evidence that favors, and much both clinical and theoretic that disproves, the view that sewer-air, except in rare instances, is the bearer of the infection, either of diphtheria or of typhoid fever.

TUBERCULOUS PERITONITIS FROM A SURGICAL STANDPOINT.¹

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THERE is no longer any doubt that the operation of opening the abdomen, washing out and draining the cavity, is justifiable in cases of ascites not the result of disease of the liver or of the kidney, and otherwise incurable. It is also equally true that in a certain number of cases this procedure has been followed by permanent cure. But it does not follow that all cases of tuberculous peritonitis should be operated upon. The class of cases of which I shall report four does not offer a brilliant field for the operative surgeon, though much may be accomplished by exploratory incision.

The following are the varieties of the tuberculous diseases of the peritoneum:

1. Miliary tuberculosis, with ascites.
2. Tuberculous infiltration of the omentum, forming one or more masses.
3. Tuberculous degeneration of the mesenteric glands, with a matted condition of the bowel, the result of the extension of the inflammation.
4. Tuberculous infiltration of the mesenteric glands, resulting in the formation of a large tumor.
5. Abscesses of the abdominal walls, of tuberculous origin.

The causes of tuberculous disease of the peritoneum may be any of the following:

1. Part of tuberculous affections of serous membranes in general.
2. Infection from neighboring tuberculous organs, as tuberculous ulceration of the intestines, tuberculous inflammation of the glands.
3. Part of a general miliary tuberculosis, when there are no localizing symptoms.

4. Infection through the uterine appendages.

Diagnosis. The following points are to be closely observed: Family history; appearance of the individual; previous tuberculous manifestations, if any; coëxisting tuberculosis (lungs and pleura).

In the course of tuberculous disease of the peritoneum, it is not uncommon to see intestinal obstruction caused by distortions and flexions of the intestines.

When the bowel, matted together by extra-intestinal bands of tuberculous material, constitutes a mass perceptible through the abdominal walls, the size and shape of the tumor may alter remarkably within a very short time.

A mass of large size may cause pressure-symptoms, such as dysuria, icterus, dyspnea, displacement of organs, enlargement of the superficial vessels, etc.

The ascitic fluid in tuberculous peritonitis is very frequently bloody, and blood may be poured out in such a quantity as to cause all the symptoms of severe intestinal hemorrhage.

The terminations of tuberculous masses in the omentum are by absorption, and by the formation of an abscess, in connection with which there may be a fecal fistula. This abscess may also perforate the gut and be evacuated in that manner.

The report of the following cases may serve to illustrate some of the foregoing points:

CASE I.—Mrs. U. V., white, forty-eight years of age, was admitted to the German Hospital, September 3, 1889, with her abdomen much enlarged. She had a family history of tuberculous disease. The present trouble, of some months' standing, commenced with pain in the abdomen, which was at first severe in character, but since the abdomen had commenced to enlarge it had been less severe. Physical examination showed the cavity distended with fluid. Examination of the chest and urine was negative.

Prolonged medical treatment having proved of no effect, I opened the abdomen in the middle line and evacuated a large quantity of bloody liquid. Both the parietal and visceral layers of the peritoneum were studded with miliary tubercles. The abdominal cavity was washed out thoroughly with warm distilled water and drained. The patient was discharged cured December 6, 1889. The cure was practically brought about at the end of five weeks after the operation, but in order to see if there were any tendency to a recurrence of the dropsy, she was detained in the hospital until the date of her discharge.

CASE II.—J. R., thirty-eight years of age, was admitted to the German Hospital with a history of two sisters having died of pulmonary tuberculosis. There was no other discoverable hereditary taint. One year and a half before admission he received a heavy blow in the right iliac region, and this was followed by pain and tenderness lasting for many months. Six months before, he had had acute peritonitis, and one month after recovery from this, a second attack followed.

¹ Read before the Philadelphia Academy of Surgery, March 7, 1892.

Six weeks before admission he was seized with severe colicky pains in the abdomen; these, with tenderness in the iliac region, persisted until the case was treated surgically. He has always been somewhat constipated. He had no history of caseating cervical glands or of other tuberculous manifestations.

The patient on admission was emaciated and anemic, and complained of severe paroxysmal pain in the umbilical and right iliac regions, the abdomen being distended and tympanitic, the bowels confined. Physical examination disclosed a fluctuating tumor above and to the left of the umbilicus, the surrounding structures being prominent and reddened. There was no demonstrable tuberculous disease of the pleura or of the lungs. A small quantity of pus escaped from an opening below the umbilicus.

The patient's abdomen was smeared with belladonna and mercury ointment, and he was tentatively treated for some time with alteratives and laxatives. The bowels moved freely, but the subjective symptoms did not lessen in severity, nor did the lumps in the abdomen diminish in size.

It was decided to explore both the fluctuating tumor above the right groin, and the abdominal cavity above the umbilicus, near the site of the non-fluctuating mass. Incision into the swelling above the groin evacuated a small quantity of cheesy pus contained between the transversalis muscle and the transversalis fascia. The wound was packed with iodoform gauze. Incision through the linea alba into the abdominal cavity above the umbilicus evacuated a puriform liquid from a cavity between the posterior layer of the sheath of the left rectus muscle and the transversalis fascia, and revealed a growth of considerable size involving the great omentum. It being impracticable to remove this infiltrated tissue, the wound was packed with iodoform gauze, the gauze in this instance being placed in direct contact with the coats of the intestines, since the edges of the parietal peritoneum could not be approximated.

Since the operation the patient has steadily regained flesh and strength, and the new-formed tissues have been entirely absorbed. He was discharged six weeks after the operation, cured.

CASE III.—Frank K., white, twenty-eight years of age, referred to me by Dr. C. Marshall, had been suddenly seized with colicky pain that had persisted for six weeks before his admission to the German Hospital. He could give no family or previous personal history of tuberculosis. He had never suffered from severe constipation, but his bowels had always been somewhat confined. The abdomen was hyper-resonant, except in the right hypochondrium, where there was distinct dullness. Palpation revealed a fixed, regularly nodulated tumor, extending to the right as far as the median line; below to one inch beneath the level of the umbilicus; and above to within one inch of the lower border of the tenth rib; its left border was undefined and apparently more deeply seated than the other portions of the growth. There was no ascites, and the contents of the thoracic cavity were normal. The patient was markedly anemic, and had lately lost several pounds

in weight. His temperature was constantly somewhat elevated. The growth varied considerably in size and shape from day to day, a peculiarity explained by Goodhart by the fact that these masses usually consist of intestines matted together by intestinal bands of tuberculous material.

The patient's grave condition improved somewhat during his stay in the hospital. He would not consent to an operation. I believed the growth to be tuberculous. I advised an exploratory laparotomy for a twofold purpose: first, to determine definitely if the mass was matted bowel or omentum. If the former, I proposed to attempt to separate the adherent coils, irrigate, and drain; and if the latter, I hoped, if feasible, to remove the mass.

On January 2, 1892, the case was again admitted to the hospital, willing now to be operated upon, because while away he had grown much worse. Laparotomy was performed, and after the escape of several ounces of milky fluid there was seen a nodulated growth involving the spinal attachment of almost the entire mesentery. A nodule at one point of the growth presented a decidedly yellow appearance, suggesting commencing degeneration. The intestines were intact. From the size and situation of the growth, removal was not attempted. The abdominal cavity was thoroughly irrigated with warm distilled water and drained. Drainage was kept up for two weeks until there was no longer any discharge. The fluid drained off for the first two or three days was like that evacuated at the time of the operation, namely, milky, and apparently largely composed of chyle. An examination of the fluid did not determine definitely the presence of chyle. After the third day the discharge was lighter in color, and so continued until it ceased to flow. Death from exhaustion occurred on February 8, 1892.

An autopsy permitted upon the abdominal cavity showed only a large quantity of milky fluid, and the tumor (mesenteric) I here exhibit. The peritoneum was much injected and thickened.

CASE IV.—Willie C., white, seven years of age, referred to me by Dr. J. V. Kelley, of Manayunk, was always an unusually healthy child until one year ago. He had never shown any personal manifestations of tuberculosis, but presented a somewhat significant family history, his maternal grandmother having died of pulmonary tuberculosis. His illness began with a contusion of the abdomen received while sledding. He subsequently complained of severe pain about the umbilicus. His parents could discover no local lesion, and thought he was malingering to escape going to school. His distress, however, became so unfeigned and severe that Dr. J. V. Kelley was called in, and he at once discovered a mass in the abdomen near the navel. Poultices were applied for some months, and although the little patient was still able to play about as before, he continued to complain of pain. The tumor remained stationary until four months ago, when pointing occurred at the umbilicus, and a considerable abscess discharged itself. A purulent discharge has since persisted, which one month ago became distinctly fecal in character. Since the appearance of feces

at the umbilicus the boy has progressively lost flesh and strength; a chronic diarrhea has set in, the stools being illy formed, dark, and excessively offensive. A doughy non-sensitive mass is still demonstrable in the umbilical region.

There is no reason why local tuberculous deposits, if they can be made out, and are in a convenient situation for operation, should not be removed before the trouble becomes general.

In suppurative cases, when the pus is confined, laparotomy should at once be performed, the abscess-cavity opened, washed out, and drained.

Case I was one of miliary tuberculosis of the peritoneum, with ascites.

Case II was an example of abscess of the abdominal walls associated with a tuberculous tumor of the great omentum. The operation of laparotomy served to evacuate the pus, which occupied the transversalis fascia, and which had evidently found its way thither from the omental mass. Packing the wound with iodoform gauze both medicated as well as drained the peritoneum at the most pronounced seat of the disease. Owing to the extensive adhesions, I did not think it prudent even to attempt to remove the omental tumor.

Case III was one of tuberculous disease of the mesenteric glands in its early stage.

Case IV was one of tuberculous infiltration of the omentum, terminating in suppuration, with bowel-involvement (fecal fistula). Here operative measures are contra-indicated.

To Dr. J. C. Heard, my resident surgeon at the German Hospital, I am indebted for the notes of the cases reported, and for his care of the patients.

HEMORRHAGE INTO THE CORD, WITH REPORT OF A PROBABLE CASE.¹

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In speaking of hemorrhage of the spinal cord it is necessary to distinguish between hemorrhage into the membranes and hemorrhage into the substance of the cord itself. The former—meningeal hemorrhage—is more frequent, and may be either extradural or sub-dural. The latter variety—hemorrhage into the substance of the cord—is the one that forms the subject of this paper.

So rare is hemorrhage into the cord, and so few have been the post-mortem examinations, that many neurologists deny the existence of such a condition. Charcot, among others, holds that primary hemorrhage is rarely, if ever, encountered, and that there is always a preëxisting inflammation, so that what has been called hemorrhage is really a very acute hemor-

rhagic myelitis. While undoubtedly many of the cases reported as primary hemorrhage were in reality cases of myelitis, still there have been a few cases, completed by autopsy, that would seem almost conclusive. One great difficulty is that in most of the cases that have come to autopsy the patients have lived long enough to allow a myelitis to supervene upon the extravasation of blood—a necessary consequence when we consider the proneness of the cord to inflammation. Throwing out, then, the doubtful ones, we still have enough cases, it seems to me, to fix hemorrhage into the cord as a pathologic entity.

It is not an easy matter to explain why hemorrhage into the cord should be so vastly more infrequent than hemorrhage into the brain. The only explanation that can be given is that the arteries that supply the spinal cord have, generally speaking, a long and tortuous course, and are not so liable to feel changes in blood-pressure as are the shorter and more direct cerebral vessels. The branches from the vertebrals and the branches from the intercostal and lumbar arteries are, for example, far less exposed to the risk of rupture than the middle cerebral, because they are not in the line of force, as is the cerebral. Most observers have denied the existence of aneurismal dilations of the spinal arteries, so common in the cerebral vessels. There would seem, then, to be no predisposing cause, such as we have in cerebral hemorrhage.

In considering the general etiology, the data are yet too few and uncertain to allow any very certain conclusions to be drawn. We leave out, of course, that most common cause—traumatism—since we are speaking of idiopathic hemorrhage. Violent exertion, sexual excess, certain fevers, as smallpox, typhus, and typhoid; scurvy, tetanus, convulsions, strychnine, alcoholism, suppression of the menses—these are some of the causes that have been thought to have more or less influence in bringing about the condition. The blood may appear as minute points, scattered mainly in the gray matter, since this part of the cord is more richly supplied with blood, and the walls of the vessels have less support than in the white matter; or we may have a very considerable quantity of blood poured out, causing great destruction of nervous tissue. Judging from certain distinctly marked cases, clinically, which recovered, it is probable that small extravasations may be quickly absorbed and may do no great damage.

Cases have been encountered at all ages, though perhaps the accident may be said to occur most frequently in males between twenty and forty years of age.

The symptomatology will necessarily vary with the amount and situation of the hemorrhage. A

¹ Read before the Clinical Society of Maryland, January 15.

large amount of blood, or even a small quantity, in the upper cervical region, may prove very rapidly fatal. The most important symptom is the suddenness of onset. If there are distinct prodromata of some days we must call the case one of myelitis, and not hemorrhage—at all events a *myelitis hemorrhagica*, and not idiopathic hemorrhage. Pain is not as common nor as severe as in meningeal hemorrhage, but it is usually felt at some point along the spine, with perhaps some girdle-sensation.

The patient in a few moments loses strength; if the hemorrhage be in the cervical region, a more or less general paralysis occurs; if in the dorsal or lumbar region, paraplegia. There may be some hyperesthesia, but this rapidly passes into anesthesia, which corresponds to the segment of the cord involved. There is an absence, or at least there is very little of the spasmodic movements and muscular rigidity, so characteristic of meningeal involvement. Of course, the meninges may be to some extent involved in an intra-spinal lesion, and hence we may have symptoms of both conditions. Bladder and rectum may be involved, especially when the lumbar cord is the part affected. There may be slight loss of consciousness, but rarely is this symptom marked. Respiratory and circulatory disturbances, as well as pupillary disturbances, are the rule when the hemorrhage is in the upper cervical region. It is important to observe that there is never any rise of temperature. The reflexes are likely to be slightly exaggerated unless large areas of gray matter, as the lumbar enlargement, be involved, in which event, of course, they are abolished.

No very thorough electrical tests seem to have been made, but in all probability electrical reaction is not much altered, unless the gray matter be largely destroyed. In this case we have either entire loss of electrical reaction or the reaction of degeneration. Muscular atrophy follows destruction of the gray matter; otherwise contractions may be noticed.

The foregoing, in brief, are the more salient points in the symptomatology of this rare affection. The following case, which came under my care recently, presents, I think, enough of these symptoms to warrant a diagnosis of hemorrhage into the cervical portion of the cord.

J. C., thirty-three years of age, a blacksmith, with a family and personal history remarkably good, says that he has never been sick a day in his life. He is a large, healthy-looking man. Three weeks before admission into the hospital he arose in the morning feeling perfectly well, ate a good breakfast, and started to his work. After walking a short distance he felt a sudden dizziness, with sharp pain in the cervical region, and he fell to the ground. He was not unconscious. He suffered more

or less pain during that day, and on the next day the pain in the region of the seventh cervical vertebra was very sharp. When he was picked up, after he had fallen, he was entirely helpless—not able to move hand or foot of either side; he was not able to move his hand freely, though he had no aphasia or facial paralysis. There was tenderness on pressure over the cervical region. He says there was marked loss of sensation, especially in the arms.

He has now regained slight use of arms and legs; he can feed himself and walk with assistance, but he has little or no use of his fingers for nice movements. There is no atrophy of muscles, or at all events atrophy is not marked. The patellar reflex is about normal. There is loss of sensation over the outer side of both arms; sensation in the legs is normal. There is slight stiffness of the neck. There is decided tenderness to deep pressure over the seventh cervical vertebra. The general condition of the patient is good. Neither bladder nor rectum is affected. The muscles of the arms showed increased reaction to the galvanic current—what might be called a slight reaction of degeneration.

The patient only stayed a week in the hospital, and has never returned, so that the outcome of the case cannot be given.

The sudden onset of the attack, while the patient was in perfect health, the absolute paralysis, the loss of sensation, the electrical reaction, the local pain—all point to hemorrhage into the cord.

Curiously enough, there was in the surgical ward of the hospital at the same time a case of fracture of the spine at about the seventh cervical vertebra, afterward confirmed by autopsy, and the areas of anesthesia of the two cases corresponded almost exactly. In all probability, as the case went on, muscular atrophy of the arms developed, an event that was foreshadowed by the electrical reaction.

CLINICAL MEMORANDA.

A CASE OF SO-CALLED LARYNGEAL VERTIGO OR LARYNGEAL EPILEPSY.¹

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OF the various neuroses of the larynx none is so rare or so unique in characteristics as that described as "laryngeal vertigo," "laryngeal epilepsy," and "complete glottic spasm in adults." So few cases of the affection have been reported that it would seem to be the duty of observers to report such cases as may come under their care, and for this reason I take occasion to add another history to the list.

Lennox Browne is the first to mention the disease in any work on *Diseases of the Throat*, but it was first

¹ Read before the New York Academy of Medicine, February 18, 1892.

described in 1876 by Charcot.¹ Since that time cases have been reported by Gasquet,² Krishaber,³ Grey,⁴ Leferts,⁵ McBride,⁶ Russell,⁷ Massei,⁸ Thermes,⁹ Knight,¹⁰ Gleitsmann,¹¹ Dauvan,¹² Lenox Browne,¹³ Armstrong,¹⁴ and recently a case has been reported by Adler.¹⁵ About twenty-five cases in all have been reported.

The history of my case is as follows: W. J. R., aged fifty years, an Englishman, manufacturer of confectioners' supplies; has resided in America ten years. His family history is good; his father and mother are still living and free from neuroses, and five brothers are all in good health. His complexion is florid and his appearance robust. He has never had venereal disease, and careful examination reveals no symptoms of syphilis, either inherited or acquired. He is of nervous temperament but has never developed any neurotic characteristics, but says his friends call him excitable. For ten years he has been under severe mental strain, from business worryment. One year ago he had articular rheumatism for four days, this being his only attack. He has never had muscular rheumatism or gout. He never has used tobacco or snuff in any form, but takes ale or beer in moderation with his meals.

In July, 1891, on entering a shop, he stepped into an open trap-doorway and struck on his hip. He was badly stunned, but did not lose consciousness. He was in bed only eight days, but refers all his suffering to the hip, and says that though he was very nervous he had no disturbance referable to the head and spine during that time. Aside from this, he has never had any fright or sudden shock of any kind; neither has he had convulsions or fits. He has never had vertigo in any form, but has had what he calls bronchial catarrh for several winters. His eyesight and hearing are normal, and he has never had aural vertigo. He has had headaches quite frequently during his life, but less so now than formerly, and has never been annoyed by hebetude or mental confusion. His attacks of coughing have always been accompanied by a profuse discharge of frothy mucus, which was on one occasion tinged with blood. Physical examination reveals very little, except coarse râles, but his heart is slightly hypertrophied and its action weak.

He first came under my notice December 20, 1891. Three weeks previously he had taken a cold that had followed about the course of those of previous years, until one week ago, when the cough became more violent and paroxysmal. He remarked to me that it was "like whooping-cough, because it was so strangling." Two

days before I saw him, during a paroxysm of coughing, without premonition of any kind, he fell suddenly to the floor upon his back, entirely losing consciousness. The attack lasted but a few seconds; he arose from the floor feeling perfectly well, with no pain or unpleasant feeling of any kind, and with no vertigo either before or following the attack. The sensation was exceedingly pleasurable, and upon being asked how he felt after an attack, exclaimed "I felt as though I had been in heaven."

Following the first attack he had one nearly every day for four days; they sometimes occurred while he was in bed. As a rule, he stood up when coughing and leaned forward with his hands upon a chair or some other object for support, but he invariably fell upon his back during the attack. On one occasion he fell upon the street, but was up again before anyone reached him. In every instance the loss of consciousness came on during a paroxysm of coughing, but he had many paroxysms of cough which were not followed by loss of consciousness. He had had four when I first saw him, and loss of consciousness was complete in all, and the sensation that gave rise to the cough was the same as he had experienced in former years. He did not bite his tongue, foam at the mouth, or groan or shriek; but on several occasions his mouth twitched convulsively during the attack, and his eyes remained open. He had, in all, twenty fits, and on one day he had five fits between 3 and 9 P.M. In every instance there was complete loss of consciousness. I instructed his wife to watch him carefully during the attacks; she reported that his face became very blue, and that unconsciousness would terminate in from five to fifteen seconds, when he would arise and walk as steadily as before. On two occasions he complained of a sensation of pressure in the arms and in the region of the deltoid muscle, and, again, of what he termed "smarting of the brain." The patellar reflexes were normal.

Examination of the upper air-passages revealed a general hyperemic condition with no specially sensitive areas. There is polypoid degeneration of the middle turbinated bones, an exostosis on the septum, on the right side, with a posterior hypertrophy on the right inferior turbinated bone. There is no varix at the base of the tongue and only slight hypertrophies. His uvula was amputated thirteen years ago on account of its relaxed condition, which caused cough. The larynx, aside from a subacute inflammation, is normal in appearance. The vocal cords are congested at the edges, but approximate perfectly. There are no signs of paralysis. After about ten days' treatment these attacks disappeared entirely, and have not recurred up to this time (February 18th). His diet was carefully regulated, his bowels opened with a brisk cathartic, and he was given fifteen grains of bromide of sodium, three times a day, in conjunction with five-minim capsules of eucalyptol, four times a day. The eucalyptol relieved both the cough and the profuse discharge in a very few days, and he has made a good recovery. He had no other medicine except a general tonic.

Lefferts's paper, published in 1883, closes with this suggestive statement: "Have I not said enough concerning this rare and curious affection to show, first, what a field for speculation, thought, and investigation lies

¹ Comptes-rendus de la Société de Biologie, p. 336. Paris, 1876. Le Progrès Méd., 1879, xvii, p. 317.

² Practitioner, August, 1878.

³ Ann. des Mal. de l'Oreille et du Larynx, 1882, p. 182.

⁴ Amer. Journ. Neurol. and Psych., November, 1882.

⁵ Archives of Laryngology, vol. iii, p. 165. New York, 1883.

⁶ Edinburgh Med. Journ., March, 1884.

⁷ Birmingham Med. Review, August, 1884.

⁸ Giorn. Internat. delle Sci. Med., Anno vi.

⁹ Journ. de Méd. de Paris, 1887, p. 936.

¹⁰ Transactions Amer. Laryng. Assoc., 1886, p. 34.

¹¹ Med. Monatsschr., i, p. 510.

¹² Journ. de Méd. de Paris, August 17, 1887.

¹³ Diseases of the Nose and Throat, 3d ed., p. 526.

¹⁴ THE MEDICAL NEWS, June 8, 1889.

¹⁵ New York Med. Journ., January 30, 1892, p. 128.

practically before us; and, second, should not this thought stimulate us to the task?" Nearly a decade has passed, during which careful observers have published cases that have come under their care, and all have noted the same general run of symptoms, viz: Paroxysms of cough, cut short by sudden loss of consciousness of short duration, occurring always in adults, and without premonition, leaving the patient as well as before the attack. In most cases there was a neurotic predisposition.

These symptoms could hardly be associated with any disease—so that the diagnosis is easy. But observers vary greatly as to the name that this disease should receive. So far, the consensus of opinion favors epilepsy.

Grey says: "The term vertigo seems to me to be a misnomer for these cases, in all of which consciousness was entirely lost, and in many of which there were convulsive movements. They are notably unlike the vertigo of Menière." This is exactly opposite to the views held by Charcot. Others, including McBride, Russell, Knight, and Gleitsmann believe it to be due to disturbance of the circulation of the brain. Lennox Browne inclines to Grey's opinion that the attacks "are more in common with the milder forms of epilepsy than with simple vertigo." McBride gave it the name "complete spasm of the glottis in adults." Thus, different observers have seen fit to give this condition different names, but no name has yet been suggested that conforms to the opinions of all observers. It would seem to me that the absence of vertigo in so many of the cases would preclude the use of the word as a name for this condition—while epilepsy would more nearly fill the requirements. Laryngeal syncope might be suggested, inasmuch as the condition is a "sudden loss of motion and sensation," with a certain amount of disturbance of the circulation and cessation of respiration. On the other hand, the pleasurable sensations experienced by so many of the patients might be accounted for by asphyxia on the same principle as that produced by laughing gas—a thought suggested to me by a prominent neurologist.

A word as to treatment. I have regretted that I did not confine my treatment to eucalyptol, so that I might have demonstrated its effects in a case of this kind. Its well-known influence upon cases of chronic bronchitis, both for the reduction of cough and diminution of expectoration, would seem to give us a remedy that will strike at the root of the disease. I cannot say too much for this remedy, given internally, for all cases of nasal, laryngeal, and bronchial affections when accompanied by free discharge. Its superiority over the eucalyptus oil can easily be demonstrated.

THE REMOVAL OF THE FAUCIAL TONSILS BY THE GALVANO-CAUTERY SNARE.¹

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It is not contended that the removal of the hypertrophied faucial tonsils by the galvano-cautery snare is a new discovery. It simply suggests that the writer feels

morally sure that the members of our profession have been slow in appropriating a most valuable expedient and one that, as it were, glared them in the face. However, the basis of what may well be termed the ideal method of tonsillotomy dates back many years and its elaboration has been the result of gradual growth.

Perhaps the excision of the tonsil by the cold snare, so often given to the young and eager students in nose and throat diseases as their first lesson in tonsillotomy, constitutes the *pater bonus* of the galvano-cautery snare operation, just as in the removal of nasal polypi it was the origin of the more scientific method that supplanted it. Very naturally, the tediousness of the operation and the prolonged continuance of the pain militated against its universal adoption; besides, the use of the tonsillotomy was so easy and satisfactory that no one cared to exert the patience that was entailed by this method—a refinement of art with few advantages and with many unsatisfactory features. But the application of galvano-cautery to the wire changes the argument of the case, relieves the snare of the onus of tediousness, and adds to its advantages so many improvements that, after once being used, it will be advocated in every favorable case. And the fact that it is not generally adopted can only be explained on two grounds: either the profession at large is not conversant with the operation—for, indeed, little has been written upon the subject—or, true to the immemorial traditions of medicine, the profession is loth to give up an operation that answers the needs so well, even if it is not ultra-scientific.

Comment is almost unnecessary upon the shortcomings and advantages of the tonsillotomy; it is a serviceable instrument, and beyond the little annoyances of a possible uncleanness of the instrument, the dangers of hemorrhage, and of snipping off a piece of the palate, and the necessity of frequently operating, as it were, with the eyes closed, the instrument is more or less perfect.

The good effect of such an operation, too, is dependent upon the operator, and we thus have every possible gradation between those who operate in the hit-or-miss style and those whose surgical technique is so finished that they can remove just as little or just as much as they desire with the utmost ease. It will be admitted, however, that in a great number of cases one is not able to remove precisely as much of the tonsil as he desires; so that there is at least room for some improvement in this particular. Again, the very common practice of pressing the tissues below the ramus of the jaw inward, augments whatever dangers otherwise existed. Any abnormality in the arrangement or course of the bloodvessels in this region may, under such a practice, change a benign operation into a dangerous one.

In the galvano-cautery snare, we have an instrument which overcomes even these little deficiencies. The danger of infection is reduced to a minimum, since it is a self-sterilizer; the red-hot wire consumes whatever germs are in contact with it, and by searing the exposed tissues prevents, in part at least, the possibility of septic infection. No hemorrhage results even in adults, and thereby an important danger is avoided. In this connection it may be remarked that although the statement is going the rounds that there has been no authentic case of fatal hemorrhage from the use of the tonsillo-

¹ Read before the St. Louis Medical Society, Dec. 12, 1891.

tome, it is, however, certain that distressing and even alarming bleeding does occur which would be impossible in a cautery operation.

The operation advocated does not necessitate the exercise of what Mackenzie describes as the only brute force required in any operation upon the throat. Again, there is no possibility of cutting off or injuring a portion of the palate. Finally, the operation is a scientific one which insures precision and security. Each operator may decide for himself how much of the tonsil he desires to remove, and what is still better, he can remove exactly that amount. In my own practice I have been so struck with the satisfactory results of this method that, where it is possible to do so, I now use it to the exclusion of all others; in fact, the considerable experience of ten months with the method amply confirms my original impressions and my present position.

The instrument used is the ordinary galvano-cautery snare for the removal of nasal polypi, consisting of a platinum or an irido-platinum wire about the size of a No. 5 piano wire, which is passed through two hollow tubes and is attached to a slide for tightening the loop. While there might appear to be some difficulty in engaging the tonsil, this will be obviated by adopting the expedient of pulling out the tonsil from its palatal bed with a pair of single-pointed forceps. Once engaged, the process is simple: drawing the wire tight by pulling the slide and sending the current through it, the operation, with but slight pain to the patient, is accomplished in a moment. It is well to make an application of a 5 or 10 per cent. solution of cocaine to the tonsil and the subjacent mucous membrane, so that the patient will not be conscious of the presence of the wire as it is being placed around the tonsil. Intra-tonsillar injections may be made, but thus far I have not found it necessary to do this. A two-celled storage battery of almost any manufacturer is sufficiently powerful for the performance of this operation. I have used the Meyerowitz storage battery with perfect satisfaction. Of course, many will be inclined to harp upon the unreliability of batteries and upon the careful attention they are supposed constantly to require; but, nowadays, when storage batteries are so elegantly made, no such condition of affairs need obtain.

The removal of the hypertrophied tonsils by galvano-cautery snare is indicated above all others whenever there is any tendency to hemorrhage; in fact, whenever there is any possibility of serious hemorrhage occurring; hence it is especially advisable in adults.

When removal of adenoid growths in the vault of the pharynx is to be done simultaneously with excision of the tonsils, nothing can take the place of the operation that I advocate. And for this reason: when the tonsillotomy operation is performed first, the bleeding may prevent the removal of the adenoids, and if the latter is performed first too much hemorrhage almost invariably supervenes to permit the former. By using the galvano-cautery snare, both operations may be completed without the occurrence of tonsillar hemorrhage and the subsequent anesthesia, and operative interference will not be necessitated.

Even in tonsils that are more or less impacted, or over which the anterior pillar projects to any extent, can this method of procedure be utilized. For it is easy

enough to grasp a small portion of the tonsil with forceps, to engage the snare, and then to remove the tissue. On a number of occasions I have had the satisfaction of observing the atrophy of the tonsil succeed this operation, with disappearance of the previous symptoms. It is certainly better to remove in this way a small portion of the tonsil than simply to cauterize it, for in the former case we have all the advantages of cauterization with the added feature of removal of a portion of redundant tissue. This is better in many instances, to my mind, than dissection of the impacted tonsil, whether by galvano-cautery or otherwise. At any rate, it is advisable to attempt the removal of a part in this way, previously to undertaking the more complicated and serious operation of dissection.

Dr. Jonathan Wright has devised an instrument for the removal of tonsils by galvano-cautery, which may be described as the application of the galvano-cautery principle to Mackenzie's guillotine tonsillotomy. While the instrument is doubtless of considerable service, it presents no advantages over the simple snare, and it is far more complicated.

Up to the present time I have not met with any complications resulting from this operation. On a number of occasions I have observed some little ear-pain immediately following the operation and sometimes persisting for a short time thereafter. This I have thought was due to the too great traction made upon the palate.

Anesthesia is not more frequently required for the performance of this operation than for the older method. In fact, it has seemed to me that it was easier to get the child's consent than when I removed the tonsil in another manner. In a number of cases, children have not only submitted to the operation but have also allowed it to be done before a large class of students.

PROFESSOR WINCKEL'S ANTERIOR COLPORRHAPHY.

BY THEOPHILUS PARVIN, M.D.,

PROFESSOR OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN IN JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

THIS operation is described in a paper by Dr. Winckel in the *Münchener med. Wochenschrift*, No. 31, 1891. Two illustrations are given with the description.

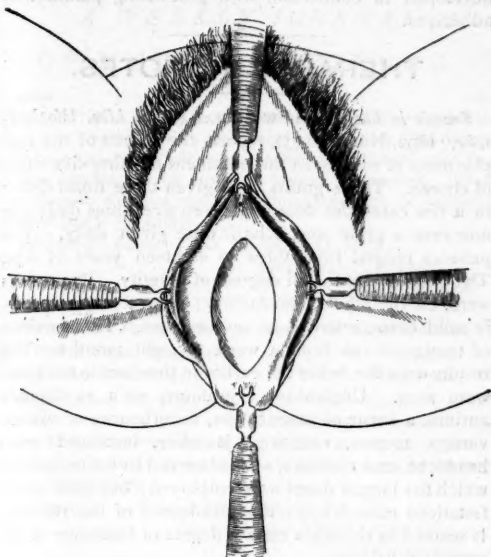
The operation commends itself by its simplicity, by its being comparatively bloodless, by there being no sacrifice of tissue, and by its satisfactory results in its author's hands. The operation has been done by me only once, and this too recently to know the ultimate result, but Dr. Winckel's experience justifies presentation of the method to the American profession.

The second and third illustrations are in part copied from those of the author, but, as I believe, somewhat improved, while the first is original. For the three as they now appear I am indebted to Dr. Bert L. Swayze.

The first illustration shows the field of operation properly exposed, and the surface made level by pulling moderately upon the four tenacula. It will be observed that these tenacula are near the extremities of the two diameters of an ellipse. The figure also shows an ellipse

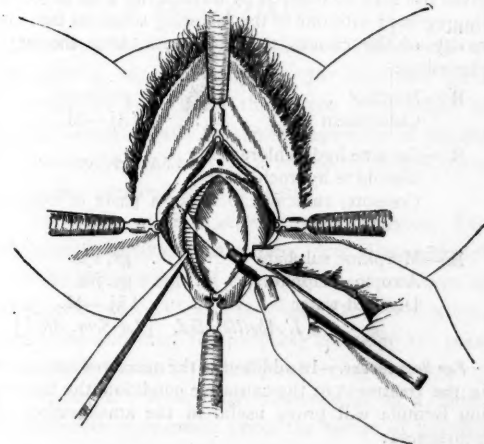
circumscribed by a vertical incision through the mucous membrane.

FIG. 1.



In the next illustration there is seen the dissection of a flap circumscribing the incised line.

FIG. 2.



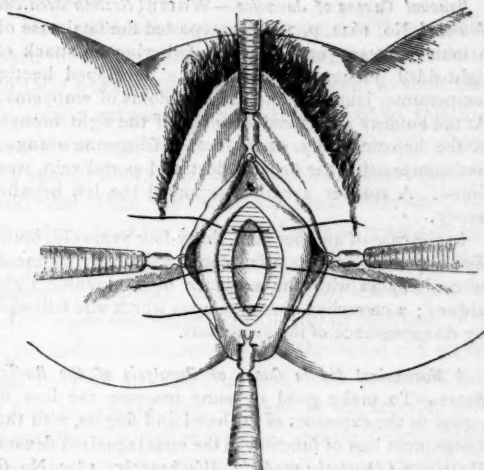
Next, the inner surface of this circumscribing flap is brought together by three silkworm-gut sutures. Fig. 3 shows these sutures introduced, but not tied.

After these sutures are tied, a continuous catgut suture is introduced, and the operation is ended.

When one bears in mind that in most, if not all, the cases in which anterior colporrhaphy is required, the vesico-vaginal wall has been greatly thinned, there is reason to believe that that mode of operating will be best in which no tissue is sacrificed, but rather retained, so as to assist in restoring the normal thickness of that wall, and especially at that part which has become

thinnest, viz., that which is furthest from the point of attachment. It is readily seen that, from the extent of

FIG. 3.



surface brought together in the median line, this part of the wall is made especially strong and resistant.

MEDICAL PROGRESS.

Acute Angio-neurotic or Circumscribed Cutaneous Edema.—

BAUKE (*Berliner klin. Wochenschr.*, 1892, No. 6, p. 114) reports two cases of angio-neurotic edema—one in a female, the other in a male. From these and from a summary of the literature, he finds many reasons for a belief in the purely nervous nature of the affection. In most of the cases the patients have been neurotic, some presenting hereditary tendencies. In many the condition was associated with other neuroses, such as urticaria, neuralgia, abnormal sensations, digestive derangement. The swelling of the skin commonly set in abruptly after mental or emotional perturbation, and disappeared as suddenly; sometimes it appeared to depend upon alcoholism. It is usually unilateral in distribution, and in females its occurrence is favored by the menstrual or the climacteric period. Its cessation is dependent upon the improvement and removal of the nervous condition with which it is associated.

Double Hemorrhagic Subdural Cyst.—At a recent meeting of the Pathological Society of London, PITT (*Lancet*, No. 3558, p. 1042) presented a double hemorrhagic subdural cyst, obtained from a man, aged forty-six years, who for eighteen months had suffered with frontal headache, with occasional right-sided twitching at night. The twitchings became more frequent two weeks before death, when the man became dull, apathetic, and increasingly comatose. At the autopsy, two delicate cysts were found in the subdural space in the frontal region. The walls of the cysts were composed of embryonal connective tissue. The cyst on the right contained six ounces, that on the left three ounces of serous fluid and recent blood-clots. The dura mater was not inflamed.

The cysts were loosely attached to the dura mater, but not to the arachnoid.

Unusual Causes of Jaundice.—WHITE (*British Medical Journal*, No. 1622, p. 219) has reported the fatal case of a man eighteen years old, who, following an attack of right-sided pneumonia, successively developed hectic temperature, jaundice, and the symptoms of empyema. At the autopsy a ruptured aneurism of the right branch of the hepatic artery, as large as a Tangerine orange, and compressing the hepatic duct and portal vein, was found. A smaller aneurism occupied the left hepatic artery.

In the case of another man, thirty-four years old, jaundice appeared, and the urine contained biliary pigment in conjunction with the existence of a movable right kidney; a corrective operation upon which was followed by disappearance of the symptoms.

A Mechanical Aid in Cases of Paralysis of the Radial Nerve.—To make good in some measure the loss of power in the extensors of the hand and fingers, with the consequent loss of function in the unantagonized flexors, HEUSNER (*Deutsche medicin. Wochenschr.*, 1892, No. 6, p. 115) has constructed a device by which the hand is maintained in a position of normal extension. The carpus, the wrist, and the lower half or two-thirds of the forearm are encased in a leather frame, reinforced on its flexor aspect by a steel plate. The thumb is left free. Upon the extensor aspect of the casing, toward its radial margin, provision is made for the attachment of four wide rubber bands that run through stalls on the dorsum of the carpus and are attached to other rubber bands encircling each finger at its origin.

The Prophylaxis of Ophthalmo-blennorrhoea Neonatorum.—BRISKEN (*Münchener medicin. Wochenschr.*, 1892, No. 5, p. 67) defends the utility of the method of Kallenbach in the prophylaxis of ophthalmo-blennorrhoea neonatorum, consisting in vaginal antiseptic douches at the beginning of labor, together with washing of the eyelids of the infant with distilled water immediately after birth. Among 728 cases thus treated, during a period of nearly three years, at the Frauen-klinik at Halle, there was not a single instance of ophthalmo-blennorrhoea at birth.

The Etiology of Paretic Dementia.—In observations made at the Vienna Insane Asylum, OBERSTEINER (*Internat. klin. Rundschau*, 1892, No. 4, p. 137) found that about a third of those presenting various forms of paralysis were syphilitic, while of these seven-eighths were paretic dements. Of other forms of psychosis but 3 per cent. presented a syphilitic history. That the relation between syphilis and paretic dementia is a direct one seems demonstrated by the identity of the lesions in the nervous system and those in other organs.

Uterine Complications of Influenza.—In addition to cases of hemorrhagic endometritis, in conjunction with influenza, already reported, GOTTSCHALK (*Centralbl. f. Gynäk.*, 1892, No. 3, p. 49) reports two cases in which the onset of the disease was marked by profuse uterine hemorrhage, while in its further course parametritis, with

exudation, appeared. In a third case, at the beginning of an attack of influenza, an acute parametritis was developed in connection with preëxisting parametrial adhesions.

THERAPEUTIC NOTES.

Exalgin in Chorea.—LOWENTHAL (*Berl. klin. Wochenschr.*, 1892, No. 5, p. 95), reports the results of the employment of exalgin in the treatment of thirty-five cases of chorea. Three grains were given three times daily; in a few cases the dose was given five times daily; in one case a grain and a half were given daily. The patients ranged from three to eighteen years of age. The cases presented all degrees of severity. The results were, on the whole, satisfactory; recovery was speedy in mild cases, retarded in severe cases. The duration of treatment was from a week to eight months. The results were the better the earlier in the disease the cases were seen. Unpleasant symptoms, such as tinnitus aurium, a sense of intoxication, disturbances of vision, vertigo, nausea, vomiting, jaundice, increased pain, headache, and cyanosis, were observed in some cases in which the largest doses were employed; but these manifestations ceased upon the withdrawal of the remedy. It seemed as though a certain degree of tolerance of the remedy developed.

For Odontalgia due to Acute Pulpitis.—When toothache is dependent upon acute inflammation of the dental pulp, the distressing symptoms to which the condition gives rise may be relieved by introducing a bit of cotton impregnated with one of the following solutions into the cavity of the carious tooth or teeth, after thorough cleansing:

R.—Menthol gr. xxxvj.
Chloroform f 3j.—M.

R.—Cocaine hydrochlorate } aa gr. iv.
Morphine hydrochlorate }
Creasote, sufficient to make a paste of creamy consistence.

R.—Morphine sulphate . . . gr. iij.
Atropine sulphate . . . gr. jss.
Distilled water . . . f 3j.—M.

L' Abeille Méd. [La Sem. Méd.]

For Hoarseness.—In addition to the measures employed in the treatment of the causative condition, the following formula will prove useful in the amelioration of hoarseness:

R.—Acid. tannic. . . . 3j.
Pulv. sodii biborat. . . 3j.
Tinct. capsici . . . f 3ss.
Aqua rosæ f 3x.—M.

S.—To be used frequently as a gargle. WHITLA.

For Metrorrhagia.—Hydrastinin hydrochlorate in doses of a third of a grain, every six or eight hours, is recommended as a useful remedy in the treatment of metrorrhagia dependent upon congestion or catarrhal inflammation of the uterus. The good results should be perceptible in the course of two or three days.—*Berlin. klin. Wochenschr.*, No. 7.

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SATURDAY, MARCH 19, 1892.

THE THERAPEUTIC EMPLOYMENT OF ANTITOXINES.

IN the *Münchener medicinische Wochenschrift* of February 2, 1892, pages 76 to 78, BUCHNER gives a review of the efforts that have been made to apply therapeutically in the management of disease in human beings the results of recent studies upon the *modus operandi* of immunity.

The work of FODAR, NUTTALL, NISSEN, LUBARSCH, BUCHNER, and others, has demonstrated that the blood-serum of certain animals possesses an antagonism to the life of particular pathogenic micro-organisms and that the property is due to the presence, in the serum, of a body belonging to the group of albumins. With this observation as a basis, experiments were made upon the serum of animals under varying conditions, to determine if there existed naturally or could be produced artificially differences in the degree of this anti-bacterial property that the serum was found to possess.

The results of these studies indicate that decided differences in germicidal powers exist between serum from different animals, in its activity against different organisms, and that this property is not confined to an influence upon the living organisms themselves, but in particular cases there is present in the blood of animals a body that is *antidotal to the poisons pro-*

duced by the bacteria, without being in any way detrimental to the life of the organisms that produced the poisons.

Most prominent among the results of these studies were the results obtained by BEHRING and KITASATO in their work upon tetanus, which went to show that in certain animals that were susceptible to this disease it was possible to produce a condition of immunity against the inroads of the organism that causes it, and that when immunity was once established the blood-serum of the immunified animal possessed the property not only of affording immunity to other susceptible animals, but had more or less of curative effect when the disease was already in progress. The same authors demonstrated that the blood and serum not only of animals that had been rendered immune to tetanus, but likewise to diphtheria, possessed the power of rendering inert the living organisms that play the etiologic rôle in the production of these maladies. The practical application of this observation to the therapeutics of tetanus was first made by TIZZONI and CENTANNI, who isolated from the serum of immunified animals the anti-tetanus principle, and TIZZONI claims to have employed it with successful results in the treatment of tetanus in the human being. SCHWARZ, assistant in the surgical clinic at Padua, also recently reports (*Centralblatt f. Bakt. u. Parasitenkunde*, Bd. x, No. 24) the cure of a case of traumatic tetanus in the human being by the use of the tetanus antitoxine of TIZZONI and CENTANNI. The case reported by SCHWARZ was one of tetanus resulting from a wound that had become infected through the soil. The tetanic spasms were not affected by chloral, hot baths, or injections of carbolic acid. After three subcutaneous injections of the antitoxine, each injection consisting of from 0.15 to 0.20 grams of the dried substance dissolved in water, the general condition rapidly improved. With continuation of these injections, in slightly increasing doses, the improvement was more marked. After each injection there was a marked fall in temperature, followed by profuse sweating. Toward the end of the injections the primary wound was excised, but this could in no marked way have affected the treatment of the case by the antitoxine, for, as the symptoms showed, there had already been a sufficient absorption into the system of the poisonous products of the organism growing at the point of infection to give rise to the characteristic spasms of tetanus. The case was dismissed from the hospital cured in six weeks.

Another case of cure by this method of treatment is also reported by SCHWARZ as having occurred in Toscana under the management of DR. PACINI.

Still another cure is reported by FINOTTI from the surgical clinic of PROFESSOR NICOLADONI in Innsbruck. This cure occurred in a boy whose hand had been crushed in a machine to such an extent that amputation became necessary. On the eighth day after amputation tetanic spasms began to appear. On the eleventh day the injections were begun, and after twenty-eight injections the case was completely cured.

In a similar line the experiments of KLEMPERER and KLEMPERER in connection with acute fibrinous pneumonia must be looked upon as a bacteriologic triumph, even though they are as yet by no means completed. These observers succeeded not only in rendering susceptible animals immune to the form of septicemia produced by the organism that is believed to be the cause of acute fibrinous pneumonia, but, moreover, demonstrated that the serum of these animals had the power of affording both immunity to the disease, when injected into other animals, and also of bringing about a cure when injected into animals in which the disease is already in progress.

After obtaining these results in the lower animals they directed their attention to the cure of the disease by this means in human beings, and found that by the subcutaneous injection of the serum of immunified animals to patients suffering from acute fibrinous pneumonia the results were in the main promising. They demonstrated that while healthy individuals and those suffering from other forms of disease presented no systemic reaction after the injection of the serum, in six cases of acute pneumonia in which the serum was employed there was a marked fall of temperature and slowing of the pulse within the first twelve hours after it was injected. In four of these cases the temperature fell to normal, but rose again after six hours; in the remaining two it fell to normal and remained there.

At about the same time EMMERICH and FARWITZKY and FOA and CARBONE published results of similar nature, in so far as the lower animals were concerned, but obtained by somewhat different means.

Space will not permit of a complete detailed review of all the observations upon this interesting subject, but those that have been cited will suffice to indicate the turn this work is taking and the direction in which it will ultimately find its greatest and most valuable application. The results of purely scientific

medical research accumulate more or less slowly, and frequently are of such a nature that they cannot be appropriated by the "busy practitioner," or, indeed, appreciated by him, but when such ends are gained as those just referred to it is difficult to understand the lack of interest and sympathy that so frequently is seen between the practising physician and the laboratory student of medical research.

IRREGULAR MANIFESTATIONS OF MALARIA.

FROM early times, clinical observers have been familiar with the fact that the malarial intoxication is manifested not only in the form of paroxysms of chills and fever, but also under that of various disturbances of the circulation, respiration, and digestion, possibly of nervous origin, and in motor and sensory disturbances of undoubtedly nervous character. An accurate knowledge of the subject, however, has by no means been widely diffused among the ranks of the profession, and prior to the discovery by LAVERAN and other observers of the characteristic hematozoa of malaria, the diagnosis of these cases has invariably been involved in more or less doubt and no little dispute. That "malaria is a cloak for ignorance" has long been a reproach made by the laity against physicians, and the statement undoubtedly contains an element of truth.

From many standpoints the lecture delivered by PROFESSOR DA COSTA at the Pennsylvania Hospital, and reported in the *International Clinics* for October, 1891, is an important contribution to the subject of malarial paralysis. The diagnosis of the case there recorded was rendered absolutely indisputable, not only by reason of careful observation of the symptoms, and by the therapeutic test, but also by the discovery of characteristic parasites in the blood. PROFESSOR DA COSTA lays great stress upon two facts of importance in diagnosis, namely, that there may be an intermittent paralysis which is not malarial, and secondly, that the manifestations of malarial paralysis are in the majority of cases far from being periodic. He distinguishes three forms: First, general paralysis or paraplegia, with irregular symptoms; secondly, the form in which periodicity is striking, which is more commonly hemiplegia; thirdly, the rarest form, that in which organic disease is produced by the malarial intoxication, and in which periodicity and variability are not prominent, the case running much the course of ordinary paralysis when produced by its usual causes. The

last-mentioned form, commonly due to a lesion such as meningitis or hemorrhage, shows itself most often in the shape of a hemiplegia. It is not, strictly speaking, a malarial palsy, although malarial fever has brought it about. It is rather palsy in malarial disease.

In the treatment of malarial palsies quinine must be given in large doses, for "the malady will go on unchecked by small doses—nay, it may develop while these, or even while what are generally considered as sufficient doses, are being employed."

In addition to the palsy of the extremities in the case reported by DA COSTA, interesting ocular lesions were found, the details of which have been published in full, with charts, by DR. HARLAN, in the *Transactions of the American Ophthalmological Society*, vol. v, 1890. Headaches, impairment of memory, outbreaks of hallucinations and of maniacal delirium, characterized the progress of the disease. Notwithstanding all this, however, recovery was complete. "Eye symptoms, brain symptoms, all disorder seemed to melt away under the potency" of quinine, coincidently with the disappearance of the microorganisms from the blood.

Less striking but more common than cases of the nature of that described by PROFESSOR DA COSTA, are malarial neuralgias, especially supra-orbital and infra-orbital. In these cases the manifestations are sometimes, but not invariably, periodic; and the pain, obstinately resistant to ordinary anodyne and nervine medication, rapidly disappears under the influence of quinine; but, as in the cases of palsy, the drug must be given in large doses: ten grains on going to bed, and from ten to fifteen grains upon rising in the morning, repeated for two or three days, have absolutely and permanently cured cases that have resisted not only ordinary treatment, but even long courses of what the elder GROSS used to call "piddling doses" of quinine.

THE IMMORALITY OF THE READING-NOTICE.

1. If true to his calling the physician is so far as possible a scientific man—that is, his statements as to disease and the cure of disease are true, and represent the facts.

2. When a physician makes a scientific statement over his own written signature, asserting a fact to be true, it follows that he must have proved the truth of his statement by his own scientific tests, knowledge, and experience, or that he at least has confi-

dence in some person of scientific authority and of undoubted trustworthiness, who has testified to the truth of the statement.

3. The editor of a medical journal is a physician.

4. A statement about medical science in his editorial columns is a personal assurance over his signature, on the part of the editor that he knows and guarantees the assertion true.

5. When an editor lends his editorial columns at high prices, and inserts advertisements under the guise of editorial authority, he thereby personally guarantees the truth of the advertiser's statements, or, for a definite bribe in hard cash, he enters into fraudulent collusion with his advertiser to pretend to do so.

6. The reading and editorial columns of a medical journal are, ostensibly at least, for the benefit of subscribers—medical men—and of medicine. The advertising columns plainly stand for what they are—space frankly sold advertisers with no editorial guarantee as to the truth of statements made. The act of smuggling an advertisement into the reading or editorial columns is deception and fraud. Every subscriber should at once resent the insult to his intelligence and morality by stopping his subscription to a journal that thus deceives him, and wrongs medicine.

A large number of medical journals are guilty of this immorality. Just at present there is synchronously appearing an advertisement in the editorial columns of many American medical journals. It is several pages long, alike word for word in each journal, and so cunningly written as to appear the spontaneous and independent assurance of the editor. To the discerning eye, however, it is a shallow advertisement of a secret proprietary preparation, one whose chemical constitution is not known, and therefore one that is squarely against the code of ethics, medical or human, to prescribe or to recommend. These editors aver that "after careful investigation we submit the following as a compendium of an examination of the pathological and physiological action" of the drug advertised. All through the article the editorial "we" is used to praise the drug in the most unqualified manner for a large number of diseases in which "we" have proved it to act "admirably," etc. The editors testify that the drug is "of the amido-benzole series, in combination, and is much to be preferred to any other of this class of derivatives, etc."

Medical writers have long been abusing the lay

and religious press for selling their space to patent medicine men, and lo! our own house stinks!

COPIES OF ADVERTISEMENTS DESIRED.

IN extenuation of the medical sin of sneak-advertising in lay newspapers on the part of physicians, it is often said that it is all the fault of their assistants, of impolitic friends, clinical subordinates, and especially of the pokey-nosed reporters. But it is a noteworthy fact that the gentlemen thus unwisely befriended and deceitfully interviewed pop up in the daily papers with suspicious regularity and persistency, and that other surgeons and experts are never traduced or reported either with or without authorization. This leads to the suggestion that a collection of reading-notices, etc., of these enterprising physicians from the secular and religious papers, extending over a sufficient space of time, would be of interest to the student of psychology and medical ethics. We therefore beg the readers of THE NEWS to send such to this office. What we particularly desire is the reports of "wonderful" and "delicate" and "unique" surgical operations; professional opinions concerning the prevailing epidemic, or fashionable disease; the *obiter dicta* of Professor Supercil or the learned Doctor Greatlite concerning the state of health or dangerous disease of some billionaire, singer, actor, criminal, or statesman, who for the hour may be posing before the public eye. We will classify and index the excerpts in a systematic way, and may give a statistical review of them at some future time, thus adding one more "insertion," as it were, and of course wholly *gratis*. Possibly, in view of this disinterested offer of ours, those most interested might be prevailed upon to spare our correspondents the trouble, by themselves forwarding their own reports and interviews. Their typewriters could supply duplicates, or the reporters by special request would doubtless furnish advance galley-slips. But on second thought we shall be forced to depend upon our subscribers, because, of course, the doctor who secretly advertises does not read THE NEWS.

SELECTIONS.

IMPORTANCE AND NECESSITY OF NATIONAL HEALTH-SERVICE.

It has long been my conviction that there should be in this, as in every other nation, a systematically con-

ducted central Public Health system, whether called a department, bureau, board, or otherwise; that it should have a responsible head; that it should have the co-operation, and assistance when required, of all State and municipal boards and authorities; that it should be a distinct and separate branch of the public service, having powers, duties, and privileges entirely its own; that it should be unhampered and undisturbed by political circumstances or changes, with ample funds and facilities for the elucidation and treatment of all the great and perplexing problems pertaining to the prevention of disease.

Whatever may be thought or said regarding the centralization of authority in a political sense, here, it seems to me, its advantages to the people of a nation are too apparent to admit the possibility of question.

National control of public sanitation is "protection" in its highest and most beneficent signification.

My own conception of our present pressing need is as follows:

I would have the National Board of Health, as at present provided, rehabilitated and charged with the duty of supervising, particularly all matters of public health in the *interior*, calling it, perhaps, the "Health Département of the Interior;" I would have the Marine-Hospital Service, as at present constituted, especially clothed with powers relating to *external* quarantine; I would have both these departments retained, acting separately under ordinary circumstances, and jointly in certain contingencies when they arise; I would have in connection with this Health Department of the Interior numerous experiment-stations established, which should be entirely under Government patronage and control, and fully equipped with laboratories—chemical, physical, and bacteriological—each with an efficient corps of well-trained scientists, upon the same general plan by which the agricultural experiment-stations are operated; I would have these scientific observers made Government officers, with salaries sufficient to insure against their personal wants, and pensions when retired, in order that their undivided attention might be given to the work for which they are employed; I would have them constantly commissioned to make original and experimental investigations into the ultimate causes of disease, wherever found, and required to report the results for publication and distribution.

As an auxiliary to this Board, I would have a National Congress of Health, to take the place of the present "Conference of State Boards," which should meet at regular intervals—a representative body composed of delegates from each of the State and Territorial boards.

And when, as in logical sequence these proposed premises suggest, an *International Board of Health* shall be established, the most efficient state of development will be attained, and sanitary science will be a mighty messenger to indicate the approach of a perfected civilization, when the protection of the health and life of every human being will be regarded as the highest and most paternal function of the State.

Let us confidently cherish the hope that we soon shall see the day when the public indifference to this all-important subject will be overcome, and when our public servants will be induced to worship the powerful Mammon less and seek the beneficent shrine of the goddess Hygeia more.

My friends, preventive medicine is the most momentous question of our time.

The late lamented Samuel David Gross, the illustrious sage, the prince of American surgeons, at the dedication of the monument erected to the memory of the pioneer of abdominal surgery, Ephraim McDowell, gave utterance to the following significant words:

"Young men of America! Listen to the voice of one who has grown old in his profession, and who will probably never address you again, as he utters a parting word of advice. The great question of the day is not this operation or that, not ovariectomy or lithotomy or hip-joint amputation, which have reflected so much glory upon American medicine, but *preventive medicine*, the hygiene of our persons, our dwellings, our streets—in a word, our surroundings, whatever and wherever they may be, whether, in the city, town, hamlet, or country; and the establishment of efficient town and State boards of health, through whose agency we shall be more able to prevent the origin and fatal effects of what are known as the zymotic, or preventable diseases, which carry so much woe and sorrow into our families, and often sweep like hurricanes over the earth, destroying millions of human lives in an incredibly short time.

"The day has arrived when the people must be aroused to a deeper and more earnest sense of the people's welfare, and suitable measures adopted for the protection, as well as for the better development of their physical, moral, and intellectual powers.

"This is the great problem of the day—the question which you, as representatives of the rising generation of physicians, should urge, in season and out of season, upon the attention of your fellow-citizens—the question which, above and beyond all others, should engage your most serious thoughts and elicit your most earnest co-operation.

"When this great object shall be attained, when man shall be able to prevent disease, and to reach, with little or no suffering, his threescore years and ten, so graphically described by the Psalmist, then and not till then will the world be a paradise."—A. WALTER SUITER, M.D., in *The Sanitarian*, March, 1892.

CORRECTION OF DISPENSARY ABUSES.

If a free dispensary is so managed as to treat the very poor only, it will do the profession no injury; on the contrary, it will be a positive benefit by relieving the profession of the care of the class that taxes the time and strength of the practitioner without yielding him any return.

Evidently the sticking-point is, who are and who are not proper objects for free treatment? It should be as much the business of a well-conducted dispensary to diagnosticate poverty as to diagnosticate disease, and always the first before the second. How is this to be done?

The ordinary way is by careful questioning, at the same time using the judgment that comes with a large acquaintance with the class in question, to determine how far their statements are to be believed. I usually ask: Are you able to pay a physician? What wages do you or does the head of the house receive? Are you out of work? How many children are in the family? An

ideal way is to employ in every case the efforts of a specially organized body whose business it is to find out just what we want to know, and abide by its decision, rendering aid without it only in urgent cases and until it can be heard from. I refer to the Charity Organization Society, which sends a speedy and wonderfully accurate estimate of the ability of the family to pay, and whether or not it should be treated free of charge.

A good way would be to have a central bureau of medical relief, to which the applicant should first go, and which should treat urgent cases without delay, referring them to the general dispensary nearest their homes for further treatment. All others should be carefully examined as to their ability to pay physicians in their own neighborhood. With the recommendation of this central office the patient might be treated at any dispensary for thirty days, when another permit could be issued, and so on.

To go to the central office twelve times a year for a recommendation is surely an easy way to receive medical treatment, if such treatment is necessary. If, however, the patient is able to pay even a small fee to a physician, the dispensary and public opinion, instead of preventing him by any device, should compel him to make such payment as the most honorable of obligations. To give a man what he can by honest labor pay for, is to take the first and a long step toward making that man a blatant communist or beggar, who wants every man with more than himself to divide with "his laziness and improvidence."

While most of the ills that dispensary patients complain of are due to minor ailments preventable or curable by a little care, fresh air, and properly prepared and eaten food, there still remains a goodly number of organic diseases, readily overlooked in the hasty way dispensary patients are often examined. Many are the cases of cardiac valvular disease treated for malaria, while there are doubtless scores of patients upon every dispensary record with undoubted renal disease who are treated for the accompanying dyspepsia, bronchitis, or diarrhea, but where no microscopic examination of the urine has been made.

Unless the dispensary physician is ever on his guard, he tends to become brusque and arbitrary in his dealings with his patients, and hasty and superficial in his methods. I am inclined to believe that no one should hold a position of this kind too long.

An attempt to obtain medical advice by false pretences of poverty should be treated as any other attempt to obtain value without rendering an equivalent. My own practice at present is, as nearly as possible, the following:

Inhabitants of certain squalid alleys well known to me are treated without question, their names, ages, and residences being recorded in a register. The destitute and forlorn, whose aspect is unmistakable to anyone having dealings with the poor, come in first of all for treatment. Mechanics, artisans, or laborers, out of work and out of money, the poor families of drunken and worthless men, are in my opinion entitled to free treatment.

Adults who have to pay for their board and lodging out of their wages when the latter are less than \$5 per week, I usually treat free at the Garrett Dispensary.

House servants, earning \$10 to \$12 per month, can and do pay physicians for advice. I dwell on the pecuniary aspect of the case, since this is where the greatest care should be taken to prevent the pauperization of the patient, and to protect the practising physician.

When in doubt whether the patient, after all, is a fit subject for a dispensary, I have in very numerous instances referred the case to the Charity Organization Society, with most gratifying results. The writer would suggest that a conference of representatives of various dispensaries of Baltimore be held, to which a number of general practitioners living in their immediate neighborhood be invited, at which the entire matter might be thoroughly discussed, and a basis arranged upon which patients will be treated or refused treatment. Such an agreement should be signed by the dispensary physicians and be binding equally upon all. It then should be posted in a conspicuous place in each dispensary. Certainly it is time that something was done in our different cities to check what is already an injury to the public at large, and to the profession in general.—WALTER B. PLATT, M.D., in *Maryland Medical Journal*, February 20, 1892.

DEFECTS IN THE STRUCTURE OR FUNCTIONS OF THE EYES AS A SOURCE OF MORBID PHENOMENA.

A SHORT time ago the editor of THE MEDICAL NEWS directed attention to the fact that a great discovery respecting the relief of human suffering had been ignored by the profession. He showed that as a fact defects in the structure or functions of the eyes actually do cause many morbid states, as headache, vertigo, dyspepsia, constipation, neurasthenia, insomnia, and other ills of kindred nature. He gave some reasons why this discovery had been so commonly ignored by the profession. His neighbor, the editor of the *Medical Record*, an accomplished general surgeon, takes up the matter, and suggests that there is such uncertainty as to what the "great discovery" is that the profession is excusable for ignoring it. He also says that many cases of headache, vertigo, constipation, insomnia, etc., get well without glasses, by the operation of natural causes, by suggestion, or by medicines. We think that these remarks by the *Record* abundantly demonstrate the force of the claim by THE NEWS. From the latter it is very evident that the editor of the *Record* does not himself comprehend the discovery. He also shows that he has not studied with discrimination the writings of ophthalmologists relating to this subject.

In general, it may be said that ophthalmologists do not claim to be able to cure every case of headache, insomnia, neurasthenia, etc., by the use of glasses, prisms, or operations upon the ocular muscles. As a rule these gentlemen are good practitioners of general medicine. Hence, they know that the great proportion of patients suffering from these disabilities are under the influence of other and adequate disturbing causes. They know that the removal of these causes will induce the desired relief. Some may not get enough sleep, some may drink too much coffee, some may suffer from over-eating, or eating indigestible food, some may be poisoned by bad air, some from too much worry, etc. But the cases

to which THE NEWS refers, and which ophthalmologists have in mind, are the complement of this large class. They are those upon whom hygiene and doctors, homeopathic, eclectic, regular, and defective have exhausted all their resources, and still the disability remains. It may be that the rhinologist has burned out the nose, the laryngologist has scraped and sprayed the larynx, the gynecologist has rendered perfect the organs of reproduction—in short every means and measure has been utilized by the most skilled, and still the patient suffers from headache, has insomnia, is neurasthenic, is constipated, is dyspeptic, etc. In such a class of cases the ophthalmologist has found by experience that his art is able to restore many, if not all, to a normal healthful condition of living. It is this fact that the general profession does not practically know, or, if it does know, it ignores it. The real difficulty in the matter is the intricacy of the problems involved, and the fact that the majority of the profession are not trained so as to be able to comprehend these problems. Hence they permit patients whom they have been unable to relieve to continue to suffer, in the calm belief that medical science can give no relief. We submit that a fair intelligent mastery of the current ophthalmological literature will convince any person that no intricate case of derangement of the nervous or nutritive system is hopeless while the eyes have not been submitted to a thorough examination by one properly trained to do this work. The charge made by THE NEWS was that such cases were daily cast off as hopeless by the general profession without having recourse to a searching examination of the eyes.

Concerning this sort of examination, any physician can become skilled in making it. But its draft upon a peculiar kind of knowledge and skill is so large that we suspect that most will not care to qualify themselves. Hence it will be imperative that they refer the class of patients under consideration to other physicians whom they know to be competent for this work. The main point is the assurance that suffering human beings secure all the relief that modern medical science, including ophthalmology, can give. Certainly it is no light matter to ignore the claim of ophthalmology to be able to relieve vast numbers of the suffering that no other means has been able to relieve.—*Editorial in the American Lancet*, March, 1892.

CORRESPONDENCE.

URIC ACID AND RHEUMATISM.

To the Editor of THE MEDICAL NEWS,

SIR: In the issue of THE MEDICAL NEWS of February 13, 1892, Dr. W. E. Shotwell propounds the question, "Is uric acid a prime or sole factor in the causation of rheumatism?"

One of the most important factors to be studied in relation to this subject is diet. On this subject the author of the article referred to seems to be greatly at variance not only with competent authorities, but also with well-established chemico-physiologic laws. Uric acid is not "produced in the system by a stimulating nitrogenous diet and the use of alcoholic beverages." A nitrogenous diet is not stimulating, and the proof of

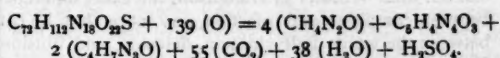
this statement is most readily determined by the nature of its chemical formation and by the results, necessary time, and mode of conversion into the final products of oxidation.

As to the use of alcoholic beverages, it might be said that alcohol in quantities that exceed the accommodative capacity of the system are damaging to the organism to the extent of their use of oxygen. The physiologic extent of accommodation differs greatly in individuals. There is practically no difference in the nature of the members of the carbohydrates and alcohols. All of them—starch and sugar—have to be converted into a glucose or alcohol-like compound, or an isomer of one or the other, before they can enter the system. The members of this group never enter the system, therefore, under their own form, and if alcohol is to be abolished from the rheumatic dietary, so should the sugars or those compounds that are converted into glucose or its isomer. Properly speaking, uric acid is not produced by anything, but it is the result of a suboxidation of the proteid food-stuffs. This incomplete transformation of the proteids follows the ingestion of a larger amount of the CHO compounds than the organism can appropriate and utilize as heat, energy, lubrication, and rotundity of form. It is a well-known fact that a CHO molecule is more easily oxidized than one of proteid nature, and being more easily changed into its final products—carbon dioxide and water—uses all the oxygen it desires, leaving but an insufficient amount for the proteids. We must remember that the oxygenating capacity of the system is a limited one. The consequence of this is that we have circulating throughout the body such products of incomplete tissue-metamorphosis as uric acid, kreatinin, kreatininic leucomaines,¹ glucose, lactic acid, oxalic acid, hippuric acid, etc., as we know them, or antecedents to these compounds.²

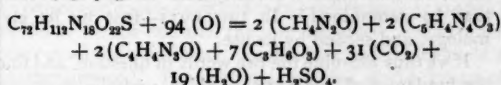
We consider, therefore, that uric acid in the urine is but the expression of deranged metabolism or incomplete oxidation of the proteid elements.

The reasoning according to which "uric acid, by its irritating influence upon the low-grade tissues of the body, gives rise to rheumatic attacks," we are obliged to consider as without any clinical, chemical, physiologic, or pathologic proof, and in direct variance with well-established and chemico-physiologic facts. Clinical observations must not be regarded as infallible. They are of value only when the laws governing the animal organism are given due consideration, and the interpretation of cardinal signs is in accordance with the results of post-mortem experience. It is admitted by all, and most scientifically explained,³ that the presence of uric acid in the various structures of the body gives rise to certain manifestations that we term gout. There seems to be no doubt but that rheumatism is caused by a special poison of a non-bacterial, *i. e.*, chemical, nature. Porter and other authorities advance the hypothesis that it is directly dependent on the formation and retention within the connective-tissue structures and intermuscular planes of lactic acid, or its antecedent compounds. Abundance of clinical evidence, the study of body-oxidation, and the products of its incomplete performance, seem clearly

to demonstrate the possibility, and greatly strengthen the probability of the hypothesis. It is found that lactic acid is a direct product of suboxidation of a proteid molecule. For if we attack the proteid with 139 parts of oxygen we get the normal waste-products, urea, uric acid, kreatinin, carbon dioxide, water, and a molecule of sulphuric acid, as follows:



If, however, the suboxidation is to the extent of where only 94 parts of oxygen are used, we have added lactic acid ($C_6H_8O_3$) as follows:



Another fact that should be considered is that when a muscle contracts vigorously it becomes acid. This acid in a certain per cent. is a natural product of energy, which is the result of oxidation, or in other words, a certain per cent. of this acid present in the tissue is directly due to normal oxidation.

Numerous researches by competent observers (Berzelius, DuBois-Reymond, Kuhne, Heinheim), have shown that this acid is lactic acid. When the metabolic processes are at fault from dietetic or other causes, this result of katabolism is not disposed of in the usual way, but is left to act as a local irritant.

Although the positive proof of the nature of the poison beyond that given is lacking, we at the same time possess the negative information that it is not uric acid, and "so rheumatism and rheumatoid arthritis are easily distinguishable from gout, where undoubtedly sodium urate is the poison." (Garrod.)

There is a difference between the two conditions—rheumatism and gout—etiologically, symptomatologically, and pathologically. The two are distinct. When we place both these conditions under the influence of a proper diet they disappear. The non-appearance and decrease of these products in the urine under treatment that insures thorough oxidation of the proteid compounds is of the greatest weight in favor of the foregoing statement. It is common clinical experience to see gout and rheumatism both present in the same individual at the same time. How can the presence of two such dissimilar diseases be explained by the novel method of reasoning that they are both caused by the same poison?

If humanity should receive the education desired by the author of the article under consideration, apoplexy, Bright's disease, tuberculosis, diabetes, and all the diseases of which the great etiologic factor is decreased nutrition and vitality would be greatly increased, and man be in a most miserable condition.

Very respectfully, JAMES WOOD, M.D.

BROOKLYN, N. Y.

"INFECTION AND CONTAGION."

To the Editor of THE MEDICAL NEWS,

SIR: I have read with much interest your editorial in THE MEDICAL NEWS of February 20th relative to the words *Infection* and *Contagion*. In any discussion, an

¹ "The Feeding of Youth," Merck's Bulletin, February, 1892.

² The Post-Graduate, January, 1892. Table IV, p. 61.

³ Porter, in Merck's Bulletin, January, 1892, p. 8.

exact agreement as to the meaning of the terms used is of the highest importance. There is no doubt that a great deal of inexact thinking, false reasoning, and many erroneous conclusions, in medicine as in other sciences, result from a lack of clear definitions.

The dictionaries often help on the confusion. No one can tell from Webster or Dunglison, the exact difference between contagion and infection, any more than he can between the words hallucination, delusion, and illusion. How, then, shall it be settled? By mutual agreement? There are too many to agree. A proper definition of a term is not one which someone thinks that it ought to have, but that which it actually does have. How shall that be determined? In two ways—first by its etymology, and second by its use.

If we thus examine the two words in question, and find the fundamental conceptions which underlie them, we shall find that a correct conclusion may be reached. It appears to me that, from its etymology, the meaning of each of those words is reasonably clear and definite, and that when one carefully observes the sense in which they are used by the majority of educated medical men, it will be seen that they are more often used in their proper and etymologic sense than otherwise.

What is wanted is clear definitions, clearly stated, and the reasons for them. A lexicographer or a grammarian arrives at a standard definition, or a standard form, by a study of its derivation and its actual use. This, when formulated, furnishes a rule for the guidance of the uninformed, and in doubtful cases. Let us examine these words and find, if we can, their underlying, basic meaning.

Infection is from *inficio*, from *in* and *facere*, to do—to do [something] to [somebody or something]. Infection is something done to some one or something, *specified*: by someone or something, *not specified*. Thus Webster's primary definitions of infect are, to stain, to taint, to affect with anything. The underlying idea is an impression upon something, by something else, foreign to itself—that is all. This is precisely the sense in which it is used in medicine. Although it is often used carelessly and loosely, and without a distinct and definite idea of its meaning, yet more often it is used with the meaning stated.

An infectious disease is a diseased condition or action of an organism, produced by some morbid entity foreign to itself. The morbid entity, from wherever coming, is an infection. It matters not whence it comes, whether from earth or air, or from some other similarly diseased organism. This definition excludes heat and cold, and generally all diseases that are autogenetic. Malarial fever, cholera, typhoid fever, and smallpox are infectious. The morbid agent comes from without; from the "not me."

Contagion, from *con* and *tangere*, conveys the idea of touching, of contact. Something [definite] is touched, or affected, by something else [also definite]. It is not necessary that the contact be immediate. It may be mediate contact. A may strike B with his fist; that is immediate contact. He may throw a stone and hit him; that is mediate contact.

Contact, or contagion, supposes two definite things; one transmitting something to the other, or affecting the other. That is just the sense in which it is used in medicine.

A contagious disease is one produced by some entity foreign to itself [*i. e.*, infection] and which infection emanates from some other organism affected with the same diseases, by the contact, mediate or immediate, whether there be actual contact, as in scabies, whether contact through the air, as in smallpox, or by fomites. These are the etymologic meanings, and the meanings most often used, though perhaps not clearly formulated by all who so use the words. Infection is a more comprehensive term than contagion. It includes it and much more. All contagious diseases are infectious, but not all infectious diseases are contagious. Some A is all B.

What of those infectious diseases [produced by a foreign morbid material] and which are not contagious [the morbid material not coming from another case]? They are miasmatic diseases, of which malarial fever is a type. Paludal miasm is an infection, but not a contagion.

It is quite true that the greater number of infectious diseases are also contagious, yet the distinction is broad and clear, and should be kept so in our minds and in our speech. Our facts may be errors, our theories may be false, yet that is no reason why they should not be clearly stated. If those who know the right will persistently follow it, the unthinking, the undecided, and the mistaken will of necessity, sooner or later, fall in with them. It is an interesting fact, that in those infectious diseases which are contagious the morbid material undergoes unlimited development and multiplication [zymosis] in the person of the individual affected, and the dosage is a matter of comparative indifference.

A microscopic particle of smallpox virus will produce, in the subject infected with it, enough to infect all mankind. This is not true of those infectious diseases which are not contagious, but are miasmatic. The morbid material is not thus multiplied in the subject infected, and the effect produced by the infection is in direct proportion to its quantity.

Let us, then, construct a formula as follows:

INFECTIOUS DISEASES.	Contagious Diseases.	{	The morbid material is indefinitely multiplied in the infected individual. Dosage immaterial.
	The morbid material comes from another individual with the same disease.		
Those produced by a morbid material from without.	Miasmatic Diseases.	{	The morbid material is produced independently of any living being, well or ill. The effect produced is in direct proportion to the dose.
	The morbid material does not come from another case of the same disease, but from any source.		

Very respectfully,

J. E. TEFFT.

SPRINGFIELD, MISSOURI.

VOMITING AFTER OPERATIONS.

To the Editor of THE MEDICAL NEWS,

SIR: In the March number of the *American Journal of the Medical Sciences*, my friend, Dr. John B. Roberts, writes as follows:

"For the nausea and vomiting which occur after inhalation of ether, I usually do nothing except to have the patient's head so placed that any ejected material may easily escape from the mouth. Little actual vom-

iting occurs if the patient has been given the preliminary hypodermatic injection, and especially so if he has taken no food for several hours before the operation. The practice of giving drugs to combat vomiting is, I believe, unnecessary and unreasonable, unless the vomiting shall be prolonged and evidently depressing to the patient. Draughts of hot water for the relief of ether-vomiting are given by some physicians, and in some cases may be desirable, as retching, when the stomach is empty, is often more disagreeable than vomiting water which has been put into the stomach."

My own experience, which is confined to a limited class of cases, and does not include general surgery, has impressed me with the fact that vomiting after operations is often quite frequent, always annoying, and, at times, of such severity as to be alarming, and even threaten a serious disturbance of the dressing, if not detachment of the sutures, with its evil consequences. I have often seen severe vomiting or retching follow the use of ether-chloroform, with and without the previous hypodermatic of morphine, alone or combined with atropine, and in cases in which no food had been administered for hours previously to the operation. This happened to me recently in a patient who had been most carefully "prepared," and also had taken ether for an operation on the perineum. At the present writing a patient is only just sleeping quietly after thirty-six hours of retching and vomiting following chloroform-narcosis for the removal of a large fibroid attached to the fundus uteri. In neither of these cases was there the slightest sign of sepsis.

Both of these cases were at once relieved by hourly doses of one drop of tinctura iodi and one grain of carbolic acid in a half-ounce of cinnamon or aniseed water.

The last-mentioned case at first vomited bile, and then the retching was most distressing. She drank water as hot as she could tolerate it—at her own request—which at first gave relief, but was then vomited *en masse*. Ice could not be borne; fomentations had no effect; cocaine was tried with temporary relief; small doses of morphine and atropine increased the trouble, and finally the mixture indicated had a quieting effect.

I have used cerium oxalate, strong coffee, drop doses of wine of ipecac (repeated every ten or fifteen minutes), iced champagne, brandy and crushed ice, mustard or cantharides to the epigastrium, sips of hot water, aromatic spirits of ammonia, peptonized milk, malted milk, frozen beef-tea, chloroform water, with at times good results, but I must say the iodine and carbolic acid (not original with me) have served me best of all.

Respectfully yours, J. M. KEATING.

COLORADO SPRINGS.

THE IRREPRESSIBLE QUACK.

To the Editor of THE MEDICAL NEWS,

SIR: IN THE NEWS of February 13th there is an article on the "Salutary Effect of State Medical Examining Boards," stating that the Examining Board of Washington had rejected one-half of the applicants. This is true, and our Board is doing good work, and we have a good law if it were enforced—but there's the rub. It will soon be two years since our law went into force,

and there have been no convictions for illegal practice. The member of the State Examining Board here is a homeopath, and we thought from the manner in which he started in to prosecute illegal practitioners in Spokane that we would have the law enforced. He began with Dr. Carey, the head of the "Biochemics." Carey was convicted in the two lower courts, and has carried his case to the Supreme Court. The expenses of prosecution have been paid by the regular Medical Society of Spokane. There has as yet been no final decision in the Carey case.

The next case was that of one Reddy, a man that had a 10-cent barber shop in Seattle three years ago. He advertises and does not pretend to have attended any medical school. In the first trial the jury disagreed, and another day is set for a new trial. Reddy then had Dr. Penfield's father arrested. Penfield is a member of the Board of Examiners, and was carrying on the prosecution here. The law provides that all physicians coming into the State after the law took effect should pass an examination. At the trial it was proved that Dr. Penfield, Sr., had sent his diploma to his son here to have it registered under the old law months before moving to Spokane. Again, the jury disagreed. At the next trial of Reddy there were no witnesses present, and the case was dismissed. Since then there have been no arrests. There are at least fifteen persons practising illegally in Spokane. They make no pretence of complying with the law. I will send you a copy of the *Northwestern Journal of Biochemistry*, one of the greatest medical monstrosities of the day. These men composing the faculty were not physicians, but they procured a charter, which was granted on the 19th of June, 1889. On the 29th of June, 1889, they issued a number of diplomas. They registered their diplomas under the old law, and on that registration they claim a right to practise.

The article in THE NEWS of February 13th would lead people to believe that Washington was no place for quacks, but they live and thrive here.

Respectfully yours, W. R. FREEMAN, M.D.

SPOKANE, WASHINGTON.

CHICAGO.

Decline in Death-rate from Typhoid—Women Physicians and Trained Nurses at the World's Fair—Charges against City Health Commissioner—Reporting and Placarding Cases of Typhoid.

TWENTY-EIGHT deaths from typhoid fever were reported in this city the last week in February, a decrease of nearly one hundred per cent. from the preceding week, when the record of fifty-two deaths was itself a marked decrease from the week preceding. Health Commissioner Ware is confident that the month of March will show a continued diminution in the number of deaths.

March 7th, the women physicians and trained nurses assembled in response to a call to hear reports and adopt plans in the interest of the profession for a display at the World's Fair. The call was signed by Dr. Frances Dickinson as Chairman, and by Drs. Isabella Hotchkiss, Marie Reasner, Katherine Miller, and Isadore L. Green. The meeting is the fourth that has been held. At the first one, on October 23, 1891, an address was delivered by

Dr. Frances Phillips, President of the Illinois Woman's Exposition Board, who invited the profession, and particularly the trained nurses, to make a special display at the Columbian Exposition, which should include an emergency ward. The suggestion was eagerly accepted, and a committee was appointed with instructions to invite the coöperation of the trained nurses of Illinois, in order that the emergency ward should represent the women physicians, surgeons, and trained nurses of the entire State. On February 25th, the Illinois Woman's Exposition Board put its seal on the project by appropriating \$6000 of its \$80,000 State fund for the proposed display. It was largely for the consideration of the best disposition of this money, and to discuss the means of securing the best results with it, that the meeting was held.

The interest in the project was abundantly shown at the meetings. The proposed exhibit was discussed by several speakers, among whom was Dr. Dickinson, who said that the display of the medical women and trained nurses of Illinois should, and probably would, form one of the most striking features of the women's exhibit at the World's Fair. The spirit of emulation was aroused by the statement that a leading feature of the exhibit to be made by the women of Great Britain would be a complete exposition of the methods of nursing employed in England, and which have attracted attention the world over. The friendly rivalry thus created between the methods employed across the water and those in vogue here would, it was suggested, lead to excellent results in the way of improving the service. A number of prominent women physicians and trained nurses from England would, it was said, visit the Fair, and the Illinois woman's display would naturally come in for a great deal of attention. For this reason, it was declared, the display should be in every way complete and a credit to the profession.

During the examination of applicants for position in the Army Medical Corps, held here in February, it is said that out of twenty-four who took the examination, but two passed.

Charges of professional discourtesy, arbitrary conduct, and officiousness, were preferred against our City Health Commissioner at a recent meeting of the Chicago Medical Society. The charges were embodied in a petition that had been actively circulated among the members of the local medical profession asking for an investigation into the methods employed by the Health Department relative to reporting contagious and infectious diseases.

In the early part of February last, Commissioner Ware sent to all physicians postal cards requesting them to report to the Health-offices all cases of typhoid fever coming under their care, as the report was of vital importance as a matter of record. The card also stated that premises would not be placarded for typhoid fever. A week after he received a letter from a prominent physician to the effect that he would make no such report, unless he received positive assurance of being paid for such services rendered to the Health-office. He was opposed to the ordinances that compel a physician to report contagious cases to the Health-office. He considers the law unfair in this regard. What right has the city to ask a physician to do its work for nothing? In

England they do things better. They give a physician a fee for reporting cases of contagious disease. The fact is, said this prominent physician, the methods employed by our health and sanitary departments are wrong. The law that places a placard quarantining a house in which is a contagious case is a relic of barbarism, a practice of medieval times, and it does a great wrong many times. Take the case where the placard is nailed on the door of a man who has a small shop under his living rooms. That man's business is ruined for two months at least. Now, is it fair or right that he should suffer simply because there is some danger that the contagion will spread beyond his house? Nothing can be done toward properly quarantining people until a contagious hospital is built.

REVIEWS.

DISEASES OF THE SKIN. A MANUAL FOR PRACTITIONERS AND STUDENTS. By W. ALLAN JAMIESON, M.D., Extra Physician for Diseases of the Skin, Edinburgh Royal Infirmary. Third edition, revised and enlarged, with woodcut and nine colored illustrations. Philadelphia: Lea Brothers & Co., 1892.

It has been but a short time since the first edition of this excellent book made its appearance, and the profession and the author alike are to be congratulated upon the present edition, which brings the subject-matter, and especially the new remedies, well up to date. Among diseases that have been elaborated or newly introduced, we may mention dermatitis herpetiformis, pityriasis maculata, lymphangioma circumscriptum, pityriasis rubra pilaris, xanthoma diabetorum, and leprosy. The classification presented is that of Bulkley, which is a complete and elaborate scheme. The subject-matter throughout the work is handled in an intelligent, plain, practical manner that betokens familiarity with the diseases considered. The symptoms and treatment receive especial attention—pathology being, we think, somewhat slighted. Everywhere we note a sense of discriminating power and an endeavor to separate the grain from the chaff. Originality, personal experience, and reports of cases are noticeable features that give interest to the book. These points serve to distinguish it from some of the older classic works on dermatology that deal with the subject in a more systematic way. The book can hardly be called a complete system of skin-diseases, no effort apparently being made to include the whole field. Considerable space is devoted to certain of the rarer diseases, some of which might with propriety have been given to several of the commoner affections. We must regard the work, therefore, as better adapted to the needs of the practitioner than to those of the student.

A test of the worth of a treatise on diseases of the skin is the manner in which eczema is considered. This chapter in the book before us, while it cannot be regarded as exhaustive, contains much of value and merit. We desire to call attention especially to the chapter on eczema as influenced by age, including infantile eczema; and also to the remarks on eczema of the climacteric period, both of which are suggestive.

The treatment of the disease receives due space, the various new modes of local applications that have latterly been introduced, including gelatin and similar dressings, pastes, and spread plasters and muslins, being referred to. Much practical information will be found in the chapter on this subject, together with instructions as to the proper employment of such recent remedies as chrysarobin, resorcin, ichthyol, and the numerous medicated soaps.

As already intimated, an honest, wholesome spirit pervades the volume, which makes itself felt nowhere more forcibly than in the parts devoted to therapeutics. With some diseases more space might well have been given to therapeutics; thus, that distressing and often rebellious affection pruritus genitalium is dismissed with apparent haste, making us wish that the author had told more that he surely knew.

The scope of the work is more cosmopolitan than is usual with English writers, mention being made here and there of the discoveries and labors of dermatologists of various countries. We note that authors are not infrequently quoted without references—an omission that is to be regretted, for the student is thus deprived of the opportunity of consulting the originals. The chromo-lithographic plates, nearly life-size, which are scattered throughout the pages are variable as to merit, but are better than are usually found interleaved in text-books. They represent some of the rarer affections, such as dermatitis herpetiformis, morphœa, acute lichen planus, lichen verrucosus, and tuberculosis of the skin. The general appearance of the book is highly creditable to the publishers. We wish the work the cordial reception it deserves.

THE TREATMENT OF TYPHOID FEVER, AND REPORTS OF FIFTY-FIVE CONSECUTIVE CASES, WITH ONLY ONE DEATH. By JAMES BARR, M.D., Physician to the Northern Hospital, Liverpool; Medical Officer of Her Majesty's Prison, Kirkdale, etc. Introduction by W. T. GAIRDNER, M.D., LL.D., Professor of Medicine in the University of Glasgow, etc. 8vo, pp. 212. London: H. K. Lewis, 1892.

THERE is no specific treatment for enteric fever. It is probable that there never will be, notwithstanding the specificity of the disease. Nor is it reasonable to hope that the disease will ever be entirely stamped out. By careful observance of prophylactic measures the risk of infection can be reduced to a minimum and extension can be limited. The invasion of the disease once established, the futility of any efforts to destroy the infective agent must be realized. It remains to treat symptoms as they arise, and by anticipating possible complications to prevent their occurrence. Any therapeutics that will minimize the risks and dangers of the natural course of the disease will commend itself. That hygienic measures, rationally applied, will meet the indications has been amply demonstrated, and among these the cold bath has proved itself one of the most useful. The employment of the cold bath in febrile conditions, and especially in enteric fever, is attended with certain minor difficulties. Dr. Barr has sought to overcome these by keeping the patient continuously in the bath. For this purpose he employs a tank, six feet long, nearly three feet wide, and sixteen inches deep, lined with lead and

having a capacity of seventy gallons. The patient, wrapped in a blanket, rests upon bed-ticking, the head, of course, not being immersed. Special provision is made for carrying off the dejections and for renewing the water, as well as changing its temperature, as occasion demands. A thermometer is constantly kept in the tank. As long as the temperature of the patient is over 100°, that of the tank need not be more than 93°, but as the body temperature approaches the normal, so should the tank temperature. Dr. Barr reports fifty-five successive cases of enteric fever, with one death. Twenty-two cases were treated in the tank; eleven received some special form of treatment, such as the wet-pack, etc.; twenty-two received symptomatic treatment. Eighteen of the patients were less than fifteen years old; twenty-nine were between fifteen and thirty; five were more than thirty. Albumin was present in the urine at one period or other in twenty-seven cases. Rose-spots were found in thirty-five. Spleen was enlarged in forty. Ankle-clonus was elicited in twenty-six. Intestinal hemorrhage occurred in four. Meningitis developed in two. Respiratory complications appeared in thirty. There were relapses in four.

THE ANATOMICAL AND HISTOLOGICAL DISSECTION OF THE HUMAN EAR, IN THE NORMAL AND DISEASED CONDITIONS. By ADAM POLITZER, M.D., Professor of Otology in the Imperial-Royal University of Vienna. Translated from the German by GEORGE STONE, of Liverpool. With 164 illustrations and 1 plate. London: Baillière, Tindall & Cox, 1892.

IN this valuable work, so ably translated into English, the reader is first informed as to the necessary instruments, then he is inducted into the method of removal of the organ of hearing from the dead body, for anatomical purposes, without visible injury to the skull; and, thirdly, examinations of the cranial cavity and brain in middle-ear suppuration, and in cases of cerebral disturbances of hearing terminating fatally, are fully considered. Then follow chapters on "Dissection of the Macerated Temporal Bone;" "Anatomical and Pathologico-anatomical Preparation of the Organ of Hearing" (an exhaustive chapter of over one hundred pages); "Making Preparations of the Organ of Hearing by the Process of Corrosion," and "Mounting and Preserving Anatomical and Pathological Preparations of the Ear." Then follows a "Special Part," divided into the following chapters: "Histological Examination of the Auricle and of the Cartilaginous Meatus;" "Histological Examination of the Lining of the Osseous Meatus;" "Histological Examination of the Membrana Tympani;" "Histological Examination of the Mucous Lining of the Tympanic Cavity;" "Histological Examination of the Ossicula;" "Histological Examination of the Intertympanic Muscles;" "Histological Examination of the Eustachian Tube;" "Histological Examination of the Labyrinth;" and "Histological Examination of the Central Course of the Nervus Acusticus." This work is indispensable to the anatomist and scientific aurist.

THE first number of *The Practitioner's Monthly*, edited by C. L. Dodge and J. Chambers, with associate editors, and published at Kingston, N. Y., claims that it will be cheap, bright, honest, independent, and devoted to the interests of the country practitioner.

MEDICAL DIAGNOSIS, WITH SPECIAL REFERENCE TO PRACTICAL MEDICINE.¹ BY J. M. DA COSTA, M.D., LL.D. Seventh edition. Illustrated. Philadelphia: The J. B. Lippincott Co., 1890.

It is practically impossible to review the seventh edition of Da Costa's *Diagnosis*, without repeating, to a very great extent, the laudatory opinions that have already been expressed in *THE MEDICAL NEWS*, as well as in other American medical periodicals.

Of this edition it may well be said that the author has succeeded in placing it abreast of the times. This is an accomplishment in which books that have reached a seventh edition often fail, for, like ships that have been rebuilt several times, they too often prove more unsatisfactory to their owners than would new vessels. The only portion of the book that invites criticism is that upon gastric disorders, in which the subject of testing the stomach contents is not considered. We presume, however, that the eighth edition will contain information in regard to this important advance in medical diagnosis. The book stands to-day, as it has always stood, an honor to American medical authorship; a trusted guide to the practitioner; and a credit to the eminent teacher who produced it. In proof of its usefulness and accuracy, it need only be said that a French translation has just appeared, and that a second edition of the German edition has been called for.

Dr. Da Costa's long experience as a teacher in Jefferson College has fitted him in a peculiarly thorough manner for knowing exactly what the student and physician need, and the result is mirrored more clearly than ever in this, the latest edition of his book.

NEWS ITEMS.

The Medical Colleges of the United States.—The following table has been prepared from the *Report of the Commissioners of Education* for the year 1888-89.

	Number of schools.	Professors and instructors.	Students.	No. of graduates at commencement of 1889.	Amount of State or municipal aid received within a year.	Benefactions.
Regular,	92	1907	12,338	3296	\$24,820	\$87,139
Eclectic,	9	116	669	186	5,200
Homeopathic,	14	249	1,159	312	25,000	16,004
Physio-medical,	1	11	15	5	200
Post-Graduate,	7	261	909	25	19,600

The Section on Ophthalmology at the Pan-American Medical Congress.—This Section has been organized by the election of Dr. Julian J. Chisolm, of Baltimore, as Executive Chairman, Dr. George M. Gould, of Philadelphia, as English-speaking Secretary, and Dr. J. Harries Pierpont, of Pensacola, Fla., as Spanish-speaking Secretary. The foreign secretaries of this Section so far appointed are: Dr. Barraza, Cordoba 1471, Buenos Ayres, the Argentine

Republic; Dr. Hilario de Gonvéa, Rio de Janeiro, Brazil; Dr. G. H. Burnham, Toronto, Canada; Dr. Proto Gomez, Carrera 8, No. 370, Bogotá, U. S. of Colombia; Dr. Juan J. Ortega, Ciudad de Guatemala, Guatemala; Dr. Juan I. Urtecho, Calle Real, Ciudad Granada, Nicaragua; Dr. Enrique López, Obrophia 51, Habana, Cuba; Dr. Joaquin de Salterain, Canelones 8, Montevideo, Uruguay.

Resident Physicianship at the Methodist Episcopal Hospital.—An examination for the position of resident physician in the Methodist Episcopal Hospital of Philadelphia will be held on Tuesday, March 29, 1892, at the Hospital, Broad and Wolfe Streets, Philadelphia, at 8 P.M.

The examination is open to both men and women; but applicants must, in accordance with the charter of the hospital, have the degree of bachelor of arts. Two resident physicians will be selected by the Trustees from the candidates who obtain the first four places in the examinations by the Medical Board.

Applications should be made to Dr. John B. Roberts, 1627 Walnut Street. Dr. Richard C. Norris, 1028 Spruce Street; Dr. William C. Hollopeter, 1408 N. Thirteenth Street; Dr. H. H. Kynett, 1728 Spring Garden Street.

International Periodical Congress of Gynecology and Obstetrics.—The Belgian Society of Gynecology and Obstetrics, under the patronage of the Belgian Government, has taken the initiative in organizing "The International Periodical Congress of Gynecology and Obstetrics," the first session of which will be held in Brussels, September 14 to 19 inclusive, 1892. Three leading questions will be offered for discussion:

1st. Pelvic Suppurations. Referee, Dr. Paul Segond, Paris.

2d. Extra-uterine Pregnancy. Referee, Dr. A. Martin, Berlin.

3d. Placenta Previa. Referee, Dr. Berry Hart, Edinburgh.

The fee for members participating in the first session will be thirty francs, which will entitle to a copy of the *Proceedings* of the Congress.

Founders (life membership) pay a fee of three hundred francs.

In connection with the Congress there will be an International Exposition of Instruments and Appliances pertaining to Gynecology and Obstetrics.

All communications pertaining to this Congress should be mailed directly to the American Secretary, Dr. F. Henrotin, at Chicago, Ill., who will promptly furnish all information. All notifications to be forwarded should be received by August 1st.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to *THE MEDICAL NEWS* will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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¹ Owing to an inexcusable inadvertence, this review is published at this late date.